MAY 9 1944

PAPER TRADE JOURNAL

MAY 4, 1944

NATURE

formed our Trademark in Yellowstone National Park

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NEXT MINUTE · *Paper Mill Machinery*

Reconversion is no problem with us; it's simply a matter of issuing orders and blueprints to our Pattern Shop, Foundry, Machine Shop, etc. Of course, we've added many new, modern, precision-production machine tools and other equipment to increase our war machinery output, BUT everything we've added will remain to help us build even better paper mill machinery. We can be ready to start manufacturing your new or replacement machinery needs in a minute after our government permits us to do so. But we can't start manufacturing until designs and specifications are determined. The sooner you consult our engineers, the sooner you place your order—then, the sooner you'll get your machinery. . . . The Downingtown Manufacturing Company, Downingtown, Pa.

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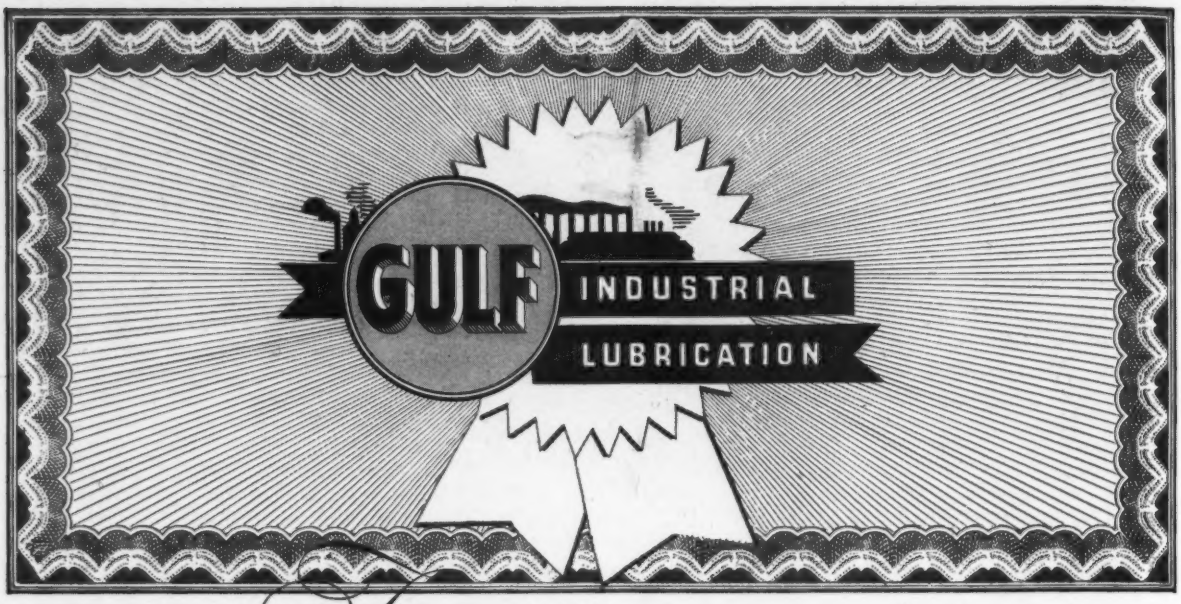

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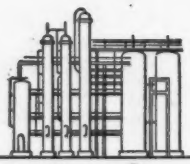

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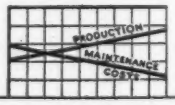

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PAPER TRADE JOURNAL
Title Reg. U. S. Pat. Off.

Vol. 118, No. 18 Thursday, May 4, 1944 Price Ten Cents

Pulp Situation Regarded Critical by WMC

Thousands of Additional Workers Must Be Added To Inadequate Force Now In Forest Industry To Supply War Needs—Pulp Supply Considered Most Critical—Too Many Men Are Leaving the Woods.

More than 60,000 recruits for the army of workers in lumbering and plupwood operations which normally totals more than a half-million men must be found before next Autumn if this year's requirements are to be met, Chairman Paul V. McNutt of the War Manpower Commission, said today. He added that unless most of the workers lost during the current slack season are replaced and employment is maintained at approximately the 1943 level, the 1944 production of lumber and timber basic products will be impaired seriously.

Lumber stocks have dwindled to an all-time low and the estimated 1944 minimum requirements of 35,500,000,000 board feet must, he said, be met almost entirely from the 1944 output. Actual requirements for the year will not be known until the results of reports required under the War Production Board's Order L-335 are tabulated. The estimate of what will be needed for military uses may, Mr. McNutt said, he raised by the war's developments. Much lumber and timber are now being sent overseas.

Pulp Supply Regarded Most Critical

WMC regards the pulp and paper situation as potentially even more critical than that in the lumber field. To meet the tremendously increased military requirements for pulp and paper products with a diminishing supply of pulpwood, all pulp has been put under allocation. Despite this and other measures, the outlook for 1944 is grave, Mr. McNutt said.

At the rate of pulpwood consumption authorized for the first quarter of 1944, requirements for the year will total 16,000,000 cords. In 1943 consumption of pulpwood totaled 15,171,000 cords and total receipts, including imports, totaled 14,816,000 cords.

To find the needed workers for production of lumber and pulpwood who will be needed, WMC has called upon its regional and state representatives to cooperate with the industry in local recruiting campaigns. Efforts will be made to switch farm labor to the woods as the harvest season closes and to recruit other seasonal workers.

If local drives in lumbering areas fail to produce the workers, needed steps will be taken, Chairman McNutt said, to bring in men from other countries. Already, he pointed out, woodsmen from Canada have been used in some parts of the country. Another limited source of labor, he said, will be prisoners of war.

Manpower in Forest Is Inadequate

Bureau of Labor Statistics figures show that employment in lumber and timber basic products declined from 479,600 in January, 1944, to 473,000 in March, 1944. Although this decline was smaller than that of the corresponding period of 1943—6,600 against 11,000—the manpower situation has become progressively more acute.

About 2,000 establishments employing 270,895 workers reported to WMC March 1 labor shortages totaling 41,445 workers. The industry includes some 35,000 sawmills of varying size and about the same number of logging establishments. Although some further improvement in manpower utilization and production methods may in part offset the decline in the labor force, the major economies of this type have already been made, Mr. McNutt said.

WMC studies show that the lumbering and pulpwood industries continued to reflect inability to hold workers when the employment level, despite 24,930 hirings, failed to increase during February, 1944. Separations in February totaled 28,470, most of them quits.

Presents Plaque To Embassy

A wooden plaque of Premier Joseph Stalin was to be presented May 1 to the Russian embassy in Washington, D. C., by H. P. Boogaard, millwright at the Kimberly mill of Kimberly-Clark Corporation, who made the trip to the capital with his wife and son for the purpose. Mr. Boogaard has long made wood-carving his hobby. About 480 hours were required to complete the Stalin plaque. Inscribed on a scroll under the picture, in Russian, is: "To the people and leader of the Union of Soviet Socialist Republics, from the United States of America as a token of friendship."

Paper Industry Plays Vital Part in War

Resourcefulness of Paper Manufacturers Exemplified By Diversified Products Important Now and of Great Promise In Post-War Years — Reports On Supplementary Compensation — Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., May 1, 1944—Marathon Paper Mills Company's Menasha Products division, Menasha, Wis., is perhaps an exemplification of the part the paper industry as a whole is playing in the war picture, and the part it will play in supplying the needs of the post-war world.

Included among Menasha Products' war packagings are ration packages, munitions cartons, bags for powders and concentrates, dehydrated food packages and over-wrappers for cartons and dehydrated-compressed foods. The division is both a manufacturer and converter. Its products have protective properties to meet all kinds of requirements and have been developed from its line of waxed, coated, laminated and treated papers.

Peacetime pioneering in the field of protective heat-sealed bags has proved important to wartime requirements for new foods, powders, medicinal and drug supplies. These are going to war in heat-sealed bags, which are also used as the inside container for army field rations. Smaller containers for individual components of the rations, such as food tablets are made of laminated cellophane, a two-ply lamination of high wet-strength paper and cellophane. The bags are heat sealed at the top after filling to give perfect protection under any climatic conditions.

The bags retain full plasticity and pliability under freezing and storage temperatures, provide protection against moisture-vapor loss, take a heat-seal and are rigid enough to stay open after forming for easy filling.

The bags are used principally for the frozen food industry in civilian life and for packaging of the new dehydrated foods. They are space-savers in war goods shipments.

This laminated "Marapak" is used in civilian life as a large bulk container by wholesalers as the inside bag for fiber containers to replace tin products.

"Fiberseal" is another product. It is used as a yeast wrapping and substitutes for tin foil. It is reported to provide protection equal to that of the critical material it replaced. Still another Marathon Products substitute product which has become standard is "Parakote food wrap," a transparent process cheese wrap.

Great interest has been aroused in the thermoplastic end labels which may well become a standard method of bread wrapping in the future. End seals are printed thermoplastic labels, automatically applied as bread packages go through the bread wrapping machine and have as principal advantages the merchandising aid of brand identification, firm end closures and reduced wrapping costs effected by saving of wrapping material and faster machine wrapping operation.

Reports on Supplementary Compensation

Supplementary compensation to 1,531 employes of the nine mills of Kimberly-Clark Corporation, Neenah, Wis., who are now in the armed forces, has reached a total of 143,801.12. Permanent employes in military service as of April 1 totaled 1,448 and temporary employees numbers 429, making an overall total of 1,877, of whom 1,531 were eligible.

Under the plan, the corporation adds enough to the pay of the new serviceman to raise his first month's income in the service to the amount he had been receiving from Kimberly-Clark. An inductee or volunteer, for example, who had been receiving $100 a month while in the employ of the corporation was given $50, which, added to his service pay, brought his first month's income up to $100.

At the Neenah mills—Lakeview and Badger Globe, the Ordnance division and the main office and sales departments, 699 eligible men received $66,259.40 in supplementary pay, or an average of $91 per employe.

At the Kimberly, Wis., mill, 363 eligible employes received $31,223.32.

At Niagara, Wis., 107 eligible workers received $9,379.53. At Niagara Falls, N. Y., 278 eligible men received $32,632.40. At Atlas mill, Appleton, Wis., 21 eligible were paid $2,206.56. At Bonifas mills, 35 received $2,099.82.

In addition to the supplementary compensation pay, the corporation pays the premium on government insurance for the man in the armed forces on an amount similar to the amount of the group insurance which he carried through the corporation at the time he entered the service.

The corporation's plan of aid to servicemen, in addition to the compensation and the insurance premium payments, will give $50 to each returning serviceman who is rehired by the company.

The corporation has retired 107 veterans of World War II who were former employes. Of these Lakeview mill has rehired 22; Badger Globe, 15; main office and sales division, 5; ordnance plant, 1; Kimberly, 22; Niagara, 11; Niagara Falls, 25; Atlas, 2, and Bonifas, 4.

Five Kimberly-Clark Corporation employes have been killed or died in service, three are missing in action, and two are prisoners of war.

File Claims Against W. C. Wing Estate

Approximately 260 persons who were employes of the Fox River Paper Company, Appleton, Wis., now the Fox River Paper Corporation, have filed claims in Winnebago County Court at Oshkosh, Wis., against the estate of the late William C. Wing, Neenah, Wis. They claim they have back wages due them under a War Labor Board decision in November, 1938, and are suing the estate on the ground that Mr. Wing was principal stockholder of the paper company.

W. A. Graunke, Wausau, Wis., attorney for the claimants, alleges that the corporation has been dissolved, making the stockholders liable for the wage payment. This point is disputed by F. E. Ballister, Neenah, Wis., executor of the estate.

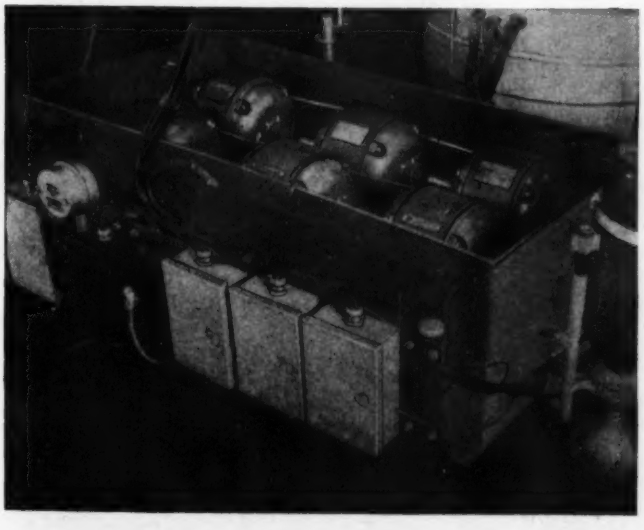
DOUSED DAILY!

G-E Tri-Clad motor coupled to a centrifugal pump on a portable cleaner in the milk plant of H. P. Hood & Sons, Inc., Charlestown, Mass.

POWERING A DAIRY PUMP, this Tri-Clad splashproof motor gets a dousing every day as the plant is hosed down. After years of service, frame and end shields are virtually uncorroded, insulation is going strong. G-E "protection tests", both in the development of the Tri-Clad design and in our daily production, help us assure you of long-lasting service from Tri-Clads on motor-wracking jobs like this.

"Hot Box" at 100% humidity tests TRI CLAD motor protection

REG. U.S. PAT. OFF.



Here is one of the many development tests which helped to prove the *extra* stamina engineered into the Tri-Clad design. In the bottom of this moisture box, just below the motor base, two inches of water was maintained at 212 F. The cover kept the humidity within the box at 100 per cent. By operating motors in this atmosphere to the breakdown point, G. E. got the low-down on the coil insulation's moisture resistance. Tri-Clad motors, in both open and splashproof construction, showed up unusually well in this extra-severe test. *General Electric Company, Schenectady, N. Y.*

GENERAL ELECTRIC

TRI CLAD MOTORS

Every week more than 192,000 G-E employees purchase more than a million dollars' worth of War Bonds.

Tentative Program for Annual Convention of Superintendents' Association

The following is the tentative program for the annual convention of the American Pulp and Paper Mill Superintendents Association to be held May 23 to May 26 inclusive at the Edgewater Beach Hotel, Chicago:—

Tuesday, May 23

All-day reception and get-together for early arrivals.

1:00 P.M. Registration.

7:00 P.M. Affiliates' dinner.

Wednesday, May 24

9:30 A.M. Business meeting. Stanford G. Blankinship, president, presiding.
Invocation—Rev. Benjamin M. Will, pastor, Country Church of the City, Chicago.
In Memoriam—Robert L. Eminger, national secretary-treasurer.
President's message—Stanford G. Blankinship.
Appointment of committees.

10:30 A.M. General Conference. Stanford G. Blankinship, president, presiding.
Wood Supply—Speaker to be announced.

11:15 A.M. The Chicago Plan of Waste Paper Salvage—John R. Robinson, chairman Chicago Salvage Drive, Chicago.

12:20 P.M. Luncheon. Toastmaster—Dwight Stocker, president, Michigan Paper Company, Plainwell, Mich.
Speaker—To be announced.

2:30 P.M. General Conference. Reemployment of War Veterans—Lawrence J. Fenlon, National Chairman of American Legion Committee on Reemployment of War Veterans.

3:30 P.M. Joint Labor- Management Committees—F. A. Denz, General Chairman, United Air Lines Transport Corporation Employees' Suggestion Conference.
H. M. K. Grylls, Chairman Labor Management Committee, E. I. duPont de Nemours & Company, Grasselli Chemicals Department, East Chicago, Ind.
Dine where you will (Special ttables available for dinner and entertainment in Marine Grill).

Thursday, May 25

9:30 A.M. Group Meetings. Chemical Pulp—Niles M. Anderson. Tissue Paper—A. M. Schmalz. Finishing, Storing and Shipping—Raymond L. Barton. Power and Plant Engineers—Raymond F. Bennett. Woodroom and Woods Operations—H. F. Hackworthy.
Papers and speakers to be announced.
Lunch where you will.

2:30 P.M. General Conference. Post-War Planning—Open Forum—Dr. Walter Hoffman, Supt. of Mfg., Fitchburg Paper Company, Fitchburg, Mass., presiding.

4:30 P.M. Business Meeting for Association Members. Reports of Committees. Resolutions. Election of Officers.

6:00 P.M. Get-Together Party. Hosts—The Allied Industries.

7:30 P.M. Banquet (informal). Toastmaster—S. G. Blankinship, Port Royal Sales Company, 230 Park avenue, New York, N. Y.
Presentation of Past President's Jewel.
Presentation of L. D. Post Trophy.
Speaker—To be announced.
Dancing.

Friday, May 26

9:30 A.M. Group Meetings. Board—James Rogers, II. Fine Papers—Homer H. Latimer. Coated Papers—Ronald Hynes. Kraft—Elmer M. Leavitt.
Papers and speakers to be announced.

12:20 P.M. Luncheon. Toastmaster—T. E. Dial, Socony-Vacuum Oil Company, New York, N. Y.
Speaker—To be announced.

2:30 P.M. General Conference.
Speaker—To be announced.

Penn Salt Personnel Changes

Pennsylvania Salt Manufacturing Company announces the following additions to its research and development department staff:

Dr. R. D. Evans, formerly with New Jersey Zinc Company; E. A. Bruce of Blaw-Knox Company; F. W. Jakob, recently discharged from the U. S. Army as 1st lieutenant and graduate of Pennsylvania Military College; J. L. Staubly of National Association of Dyers and Cleaners; J. M. Swales of U. S. Navy Inspection Department; J. J. McBride of Franklin Research Company; Miss Katherine Dilworth of Delaware County Hospital; and Miss Gertrude Schutze of National Broadcasting Corporation.

New staff members also include Miss Margaretta E. Aeugle of Duke University and Miss Gladys Molyneux of Cornell University.

Thomas Toovey, well known pulp and paper specialist, has been transferred from Sales Service to the Research and Development Department where he will have supervision of research and development work related to new and improved pulp and paper chemicals.

A. T. Carter Goes To New York Office

BOSTON, Mass., May 1, 1944—A. T. Carter, representative in New England for the Pejepscot Paper Company, with offices at 161 Devonshire street, now has his headquarters at the main office in New York. Mr. Carter continues as representative in the New England territory and will come to the Boston office, which will be maintained, every three or four weeks.

IT "HOLDS UP"

LIGHT– STABLE
MAINTAINS CONSTANT VISCOSITY
PRODUCES CONSISTENT RESULTS

From the original formulation to the actual application in your product, Methocel is stable. Its rugged film-forming qualities—its wide viscosity range and chemical compatibility—"hold up" under the most exacting requirements. Whether in its original solid form or in liquid, Methocel maintains constant chemical stability. Odorless, colorless and nontoxic, this water soluble material is also resistant to alkalies, dilute acids, fermentation and mold growth.

METHOCEL
THE UNIFORM SIZING MATERIAL

The unusual ability of Methocel to hold varying types of inks has proven of great interest to the trade. The colorless and odorless features of Methocel, plus its effectiveness in paper sizing, suggest many additional advantages. The use of Methocel as a retarding surface coating for oils, greases, paraffin and paper lacquers at low cost is now an established practice. Combine this with its consistent ability to produce uniform results plus its stability to hold up under most trying conditions. Consult Dow Technical Service for additional data.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit
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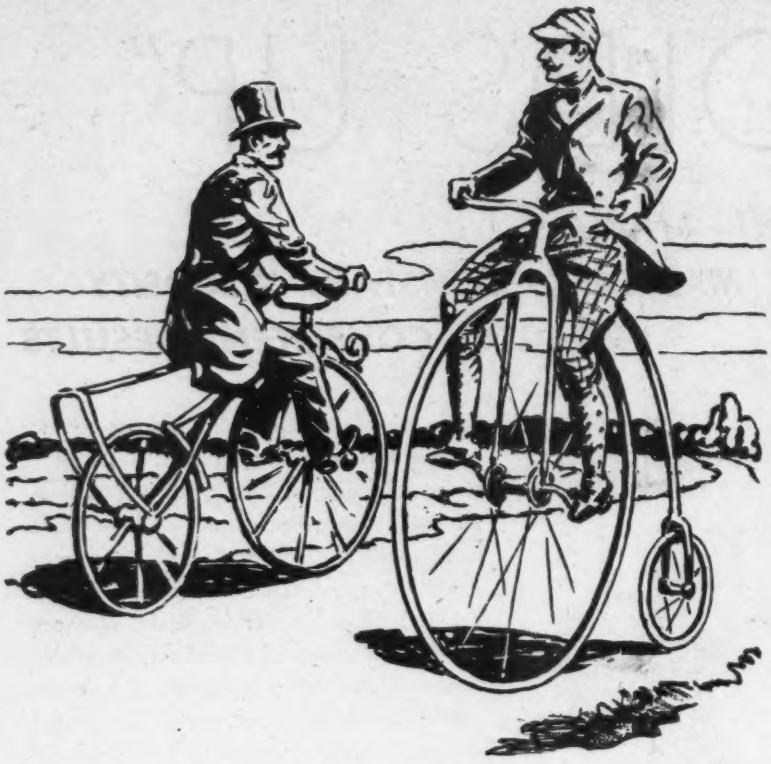
METHOCEL

Among the many Dow Products serving the Paper Industry are: Ethocel, Dowicides and Caustic Soda.

DOW

CHEMICALS INDISPENSABLE
TO INDUSTRY AND VICTORY



American Pioneers

First bicycle — the "Boneshaker," was popular in 1865 to 1869, followed by the high wheeler in 1872 to 1885.

The racing type of "front wheeler" bicycles attained a speed comparable with the fastest paper machines, or around 1500 feet per minute. This depended of course, on the stamina and strength of the rider.

The speed of a paper machine on the other hand, depends upon other factors, yet is largely determined by the porosity of the felts provided.

DRAPER FELTS are designed to give the maximum porosity consistent with your other specifications. Perhaps we can re-design your felts so as to attain greater speed and more production.

Why not try a DRAPER FELT?

Draper Felts For Efficiency

DRAPER BROTHERS COMPANY

Woolen Manufacturers Since 1856

CANTON, MASS.

OUR REPRESENTATIVES to serve you

L. H. BREYFOGLE, Kalamazoo, Mich.

RALPH E. BRIGGS, Canton, Mass.

W. L. CAMPBELL, Savannah, Ga.

E. R. LELOFF, Vancouver, Wash.

CHAS. E. BERTSCHY, Milwaukee, Wis.

U. S. Paper Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 3, 1944 — Frank Parsons Paper Company has been awarded the contract for furnishing the Government Printing Office with 56,000 pounds of white offset paper at 7.67 cents. Other paper awards just announced for paper purchased on the open market include the following:

Frank Parsons Paper Company will also furnish 84,000 pounds of white offset paper at 7.67 cents and the R. P. Andrews Paper Company will furnish 100,000 pounds of same at $7.56 per cwt. Central Fibre Products Company will furnish 50,000 pounds of newsboard at $50.00 per ton and Barton, Duer & Koch Paper Company will furnish 33,600 pounds of antique book paper at 24.84 cents.

R. P. Andrews Paper Company will furnish 14,400 pounds of Riegel's Tufwite tag paper at 9.75 cents and the Barton, Duer & Koch Paper Company will furnish 40,000 pounds of 50% rag, white index paper at 16 cents. Walker Goulard Plehn Company will furnish 92,662 pounds of white V mail writing paper at $6,856.99 and Fleming & Sons, Inc., will furnish 40,000 pounds of newsboard at $48.00 per ton.

Stanford Paper Company will furnish 36,000 pounds of white cover paper at 9.88 cents and Barton, Duer & Koch Paper Company will furnish 86,250 pounds of 50% rag white index paper at 16 cents. The same firm will also furnish 86,500 pounds of same at 16 cents.

International Sales Paper Company will furnish 80,000 pounds of newsprint paper at $58.00 per ton and the same firm will also furnish 150,000 pounds of same at the same price. International will also furnish 930,000 pounds of newsprint at $58.00 per ton. The Mead Sales Company will furnish 44,000 pounds of offset book paper at 7.32 cents.

Marquette Paper Corporation will furnish 24,700 pounds of white book paper at 7.44 cents and the Mudge Paper Company will furnish 8,840 pounds of jute tag board at 11.25 cents. Paper Corp. of U. S. will furnish 13,566 pounds of tan juteen paper at 9.9 cents and the Stanford Paper Company will furnish 70,000 pounds of white offset paper at 9.756 cents. The Marquette Paper Corp. will also furnish 826,000 pounds of white book paper at 7.34 cents and Barton, Duer & Koch Paper Company will furnish 23,400 pounds of 100% rag white ledger paper at 23 cents.

Southern Paper Men Meet

The annual meeting of the Southern Paper Trade Association was held at the Roosevelt Hotel, New Orleans, La., April 19, 1944, J. W. Knight, of Jacksonville, Fla., presiding. Merchants were present from Jackson, Miss., Mobile, Memphis, Nashville, Atlanta, Jacksonville, and New Orleans. A. H. Chamberlain, executive secretary of the National Paper Trade Association, was present and addressed the meeting. A luncheon, tendered by the New Orleans merchants, was served during a recess of the meeting, in the American Room of the Roosevelt.

A principal discussion was concerning the best way to assist in pushing the lagging waste paper drive, in Southern Association territory, as this collection was termed of vital interest to the paper merchant. The meeting resolved that in each city in the territory the paper merchants should organize, appoint and get behind a committee that would be unceasingly active in promoting and pushing waste paper collection. It was the opinion that valuable help might be obtained from American Legion local posts, Civilian Defense Block Leaders, and from truck owners who might be persuaded to donate their trucks to assist the collection for a stated period each week.

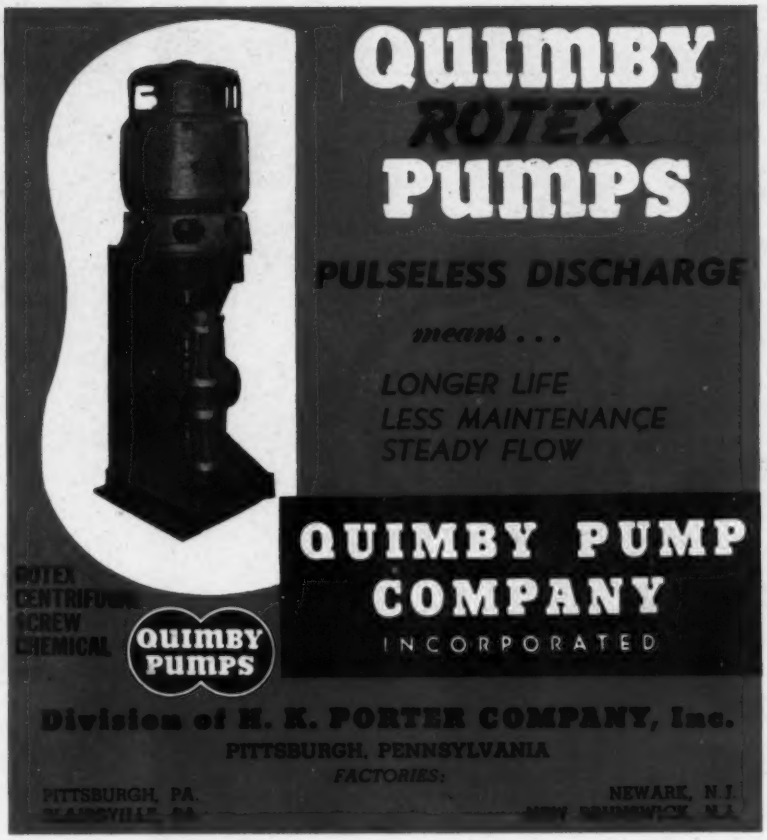
Officers for the year 1944-45 were elected as follows:—President, J. W. Knight, Jacksonville; 1st Vice President, W. A. Rhodes, Atlanta; 2nd Vice President, Mayer Myers, Memphis; Treasurer, H. T. Newell, Jackson, Miss.; Secretary, C. E. Dobson, New Orleans. Directors:—D. Page Sanders, A. D. Cleveland, G. G. Tayloe. All were re-elections except Mr. A. D. Cleveland.

Paper Box Men To Meet

The twenty-sixth annual meeting of the National Paper Box Manufacturers Association will be held at The Drake, Chicago, May 21 to 24.

Due to the paper and paperboard shortage and the unprecedented demands for paper boxes, both for war and civilian purposes, several important rulings will shortly be released by WPB, in Washington, and War Agency speakers will therefore dominate all four sessions of the business program.

The speakers include G. G. Otto, director, Paperboard Division, WPB; Dale Purvis, associate member, National War Labor Board; W. Clement Moore, cost and tax consultant, Philadelphia; John H. Paterson, consultant, Paperboard Section, WPB; Walter H. Walker, unit chief, Setup and Folding Box Section, OPA; W. Irving Osborne, Jr., president, National Paperboard Association; C. Victor Hodder, administrator, Packages and Converted Paper Products, the Wartime Prices and Trade Board, Canada; Brig. Gen. H. F. Safford, Chief of Products Service Branch, Industry Division, Office Chief of Ordnance; Thomas H. Shopherd, Assistant Chief, Special Industries Division, Bureau of Utilization, War Manpower Commission; B. Harrison Neuman, U. S. Treasury, and Walter P. Miller, Jr., who is President of the National Paper Box Manufacturers Association.



Type P Combustion Control

To describe its new system of combustion control designed especially for the smaller industrial or municipal power plant, Leeds & Northrup Company has just issued a new catalog, "L & N Combustion Control, Type P."

This publication shows how the system regulates fuel-feed and draft by a simple electrical balance, varying the settings of valves, dampers or vanes in definite proportion to steam demand. At the same time, furnace pressure is automatically regulated.

The application of this system to different types of boilers . . . stoker fired, pulverized coal fired, gas fired, and oil fired . . . is shown in the catalog by schematic illustrations. Several typical installations are pictured.

The publication also describes how the operator . . . without leaving the panel . . . can switch from automatic control to semi-automatic or can regulate any or all of the various drive units by push buttons. This independent operation of the drive units is said to allow the controllers to be serviced without interrupting the operation of the boilers.

Because all equipment except drive units can be shipped, mounted and wired on one compact panel, installation of this Type P system, point out the makers, is reasonably simple.

For more complete information about this system for the smaller power plant, write for Catalog N-01P-163, "L & N Combustion Control, Type P," Leeds & Northrup Company, 4934 Stenton avenue, Philadelphia 44, Pa.

Obituary

Thomas G. Henderson

Thomas G. Henderson, 62, for many years superintendent of the Bird & Son, Inc., Felt Mill, at Phillipsdale, R. I., passed away on Tuesday, April 11, 1944, after a short illness.

Mr. Henderson was born in Whitehaven, England. He came to this country as a young man and began work at the East Walpole Paper Mill of Bird & Son, Inc., in December, 1894, working on the paper machines and finally becoming a machine tender. About 1910, he was transferred for a year to the Bird & Son plant in Pont Rouge, Quebec, Canada, and about 1912, transferred again to the Phillipsdale, Rhode Island, plant as assistant superintendent. After serving a short while as assistant, he soon was promoted to superintendent of the plant.

During his years as superintendent, the plant achieved many fine records in production and safety. In November, 1937, the Phillipsdale Division completed the best "'No Accident Record" ever achieved by a Bird & Son plant, working 1,043,647 man hours without a lost time accident. In October of this same year, Phillipsdale was awarded the major trophy of the Paper Industry Magazine and Safety Council Group B-National Paper and Pulp Safety Contest. The award was made at the annual meeting in Chicago, and Mr. Henderson was present to receive it in person.

In January, 1942, he relinquished his duties as superintendent but continued to serve in an advisory capacity to the new superintendent, Mr. Joseph A. Sheehan. He had been in reasonably good health until recently when it became necessary for him to undergo an operation which was not successful.

He is survived by his wife, Mrs. Amy J. Henderson; a daughter, Mrs. Edith May Richmond of Rumford, R. I.; a son, Cecil W. Henderson of Needham; two granddaughters; two brothers, John B. and Samuel, both of Brooklyn, N. Y., and two sisters. Mrs. Carl Smith of Stoughton, and Mrs. Raymond Brown of Foxboro.

Funeral services were held on Friday, April 14.

Paul L. Houston

Paul L. Houston, 53, of 86 Farmington avenue. Longmeadow, Mass., president and director of the Marvellum Paper Company of Holyoke and widely known in the paper manufacturing field in this area, died April 15 in Springfield Hospital. He was born in Holyoke on Oct. 28, 1890, son of Joseph E. and Harriet (Street) Houston, but had made his home in Longmeadow for the last 16 years.

He was graduated from Hotchkiss School and from Yale University in 1913. He learned the paper business with the American Writing Paper Company in Holyoke and from 1919 to 1923 was connected with the Bureau of Standards in Washington. Following this he became the owner of the Centennial Mills in Kinderhook, N. Y., which he operated until 1928 when he became associated with the Marvellum Company manufacturers of box cover papers and recently engaged in the manufacture of paper wrappings for war work.

He was a member of the First Congregational Church of Longmeadow, Holyoke Rotary Club, Longmeadow Country Club and the Colony Club.

He leaves his wife Margaret (Lyon) Houston; two sons, Corp. Whiting S. Houston, USA, and Stanley L. Houston, V-12, USN, now at Muhlenberg College, Allentown, Pa.; and two sisters.

Rasmus Anderson

Rasmus Anderson, 53, international representative of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, and Green Bay labor leader for a quarter century, died unexpectedly Sunday morning, April 16, at his home at Green Bay, Wis. He was stricken a few hours after his return from Port Edwards, Wis., where he had spent the previous day assisting in the settlement of a labor dispute in the Port Edwards mill of the Nekoosa-Edwards Paper Company.

He had been active in organized labor since he entered the employ of the Green Bay Paper and Fibre Company in 1910 as a stationary engineer. He remained constantly in the employ of this company and its successor, Hoberg Paper Mills, until April 15, 1937, when he left to devote all his time to his duties in the union. His territory included Wisconsin, Upper Michigan, Minnesota, Indiana and Illinois, comprising more than 80 local unions.

Survivors include the widow, three daughters and three grandchildren. Funeral services were conducted Wednesday afternoon, April 19.

Didrick C. Trondsen

Didrick C. Trondsen, a former official of the American Wood Board Company and the Blandy Paper Company, Schuylerville, N. Y., died at his home in Clarks Mills April 13 at the age of 83.

Mr. Trondsen was born in Norway and had been a resident of this country for 60 years. In 1937 he severed all connections with the above concerns and retired from business.

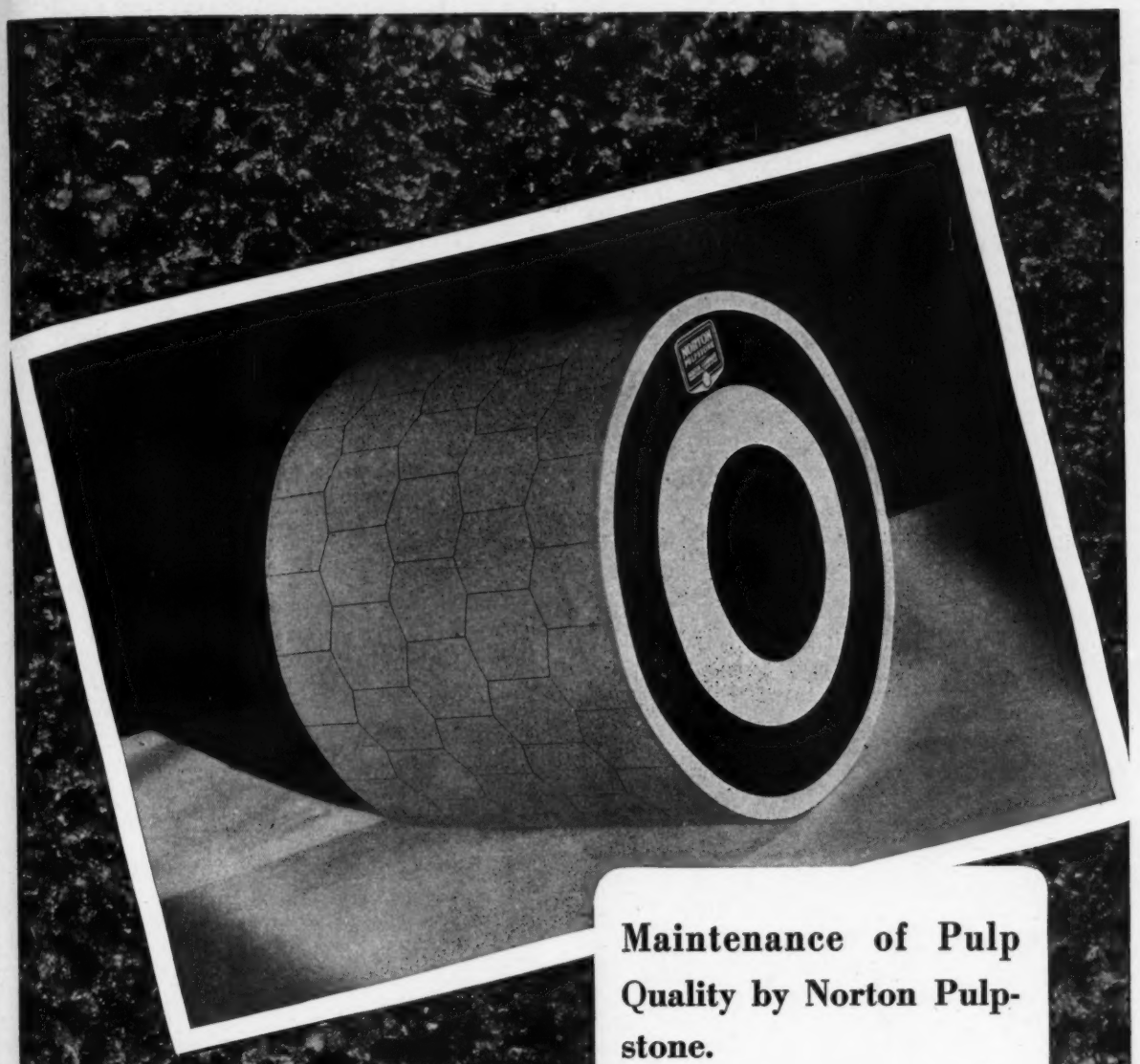
He is survived by three nephews in Norway.

March Newsprint Statistics

Production of newsprint in Canada during March 1944 amounted to 252,092 tons and shipments to 232,012 tons, according to the News Print Service Bureau. Production in the United States was 61,201 tons and shipments 61,471 tons. The output in Newfoundland was 18,868 tons and shipments were 21,854 tons making a total North American production of 332,161 tons and shipments of 315,337 tons. Total production in March 1943 was 333,825 tons and shipments were 333,401 tons.

The Canadian mills produced 32,549 tons more in the first three months of 1944 than in the first three months of 1943, which was an increase of four and six tenths percent. The output in the United States was 30,100 tons or fourteen and six tenths percent less than in the first three months of 1943; in Newfoundland production was 18,283 tons or forty-two and five tenths percent more, making a net increase of 20,732 tons, or two and two tenths percent more than in the first three months of 1943.

Stocks of news print paper at the end of March were 131,154 tons at Canadian mills, 9,793 tons at United States mills, and 49,909 tons at Newfoundland mills, making a combined total of 190,856 tons compared with 174,032 tons on February 29, 1944, and 189,571 tons at the end of March 1943. There was still further accumulation of tonnage at points from which water shipments will later be made.



Maintenance of Pulp Quality by Norton Pulpstone.

Uniform uninterrupted production was never more important than now.

NORTON COMPANY
Worcester, Mass.

NORTON ABRASIVES

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending April 29, 1944

STOCKS

	High	Low	Last
A. P. W.	2⅜	2⅜	2⅜
Armstrong Cork Co.	36	35⅝	36
Celotex Corp.	11⅝	11½	11½
Celotex Corp. pf.	17⅝	17¼	17½
Certain-Teed Products Corp.	4⅞	4⅝	4⅞
Certain-Teed Products Corp., pf.	60⅛	57½	58½
Champion Paper & Fibre Co.	23⅜	23	23
Champion Paper & Fibre Co., pf.	109½	108	109
Congoleum Nairn Co.	23¾	22⅝	23¼
Container Corp. of America	23	22¾	23
Continental-Diamond Fibre Co.	11½	11	11⅜
Crown-Zellerbach Co.	16¼	15⅞	16
Crown-Zellerbach Co., pf.	99½	98⅜	99
Dixie Cup Co.	16½	16	16
Dixie Cup Co.—A.	45	44½	45
Flintkote Co.	21⅛	20⅜	20⅝
Flintkote Co., pf.	107¼	104⅜	107¼
Robert Gair	3⅝	3½	3½
Robert Gair, pf.	14¾	13¾	14¾
International Paper Co.	14	13¼	14
International Paper Co., pf.	72½	71⅜	72½
Johns-Manville Corp.	89¼	88	89
Johns-Manville Corp., pf.	....	....	....
Kimberly-Clark Corp.	36	35½	36
MacAndrews & Forbes	26	26	26
MacAndrews & Forbes, pf.	139	139	139
Masonite Corp.	43⅞	42¾	43¾
Mead Corp.	8⅞	8½	8⅞
Mead Corp., pf. A-6%	91	89½	91
Mead Corp., pf. B-5½%	80	79¾	80
National Container Corp.	14½	13⅝	14½
Paraffine Companies, Inc.	47¾	47¾	47¾
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	14	13⅞	14
Rayonier, Inc., pf.	30	29¾	29¾
Ruberoid Co.	28½	28½	28½
Scott Paper Co.	39½	38¾	39
Scott Paper Co., pf.	110	109	109
Sutherland Paper Co.	31⅝	31	31⅝
Union Bag & Paper Corp.	9¾	9½	9⅝
United Paperboard Co.	4⅜	4¼	4⅜
U. S. Gypsum Co.	71	70¾	71
U. S. Gypsum Co., pf.	176	176	176
West Virginia Pulp & Paper Co.	18	18	18
West Virginia Pulp & Paper Co., pf.	....	....	....

BONDS

Abitibi Pulp & Paper Co. 5s '53	68½	68½	68½
Celotex Corp. 3¾ '55	103½	103¼	103½
Certain-Teed Products Corp. 5½s '48	101¼	100¾	101¼
Champion Paper & Fibre Co. 4¾s '50	....	....	....
International Paper Co. 6s '55	107¼	106½	107¼
International Paper Co. 5s '47	103⅛	103⅛	103⅛
Mead Corp. 3½s '53	....	....	....
West Virginia Pulp & Paper Co. 3s '54	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending April 29, 1944

STOCKS

	High	Low	Last
Great Northern Paper Co.	32¾	32⅛	32⅛
Hummel-Ross Fibre Corp.	5	5	5
St. Regis Paper Co.	4½	4¼	4½
St. Regis Paper Co., pf.	149½	148	148
Taggart Corp.	5½	5½	5½

BONDS

American Writing Paper Co. 6s '61	....	....	....

M. & O. Nets $237,824

Minnesota and Ontario Paper Company and its United States and Canadian subsidiaries showed consolidated net income of $237,824 for the three months ended March 31, 1944, as compared with $343,422 in the similar period of 1943, R. H. M. Robinson, president, reported.

The company manufactures newsprint, ground wood, kraft and sulphite papers, Insulite and lumber products, and operates mills at International Falls, Minn., and Fort Frances and Kenora, Canada.

Net sales reported for the first quarter were $5,730,315, an increase of $40,251 over net sales in the first three months of 1942, which were $5,690,064. Cost of sales reported for the same period was $4,772,404, compared with $4,498,200 last year. This left a gross profit of $957,910, in comparison with $1,191,863 in 1943.

Selling, administrative and general expense was $477,066, leaving net profit on operations of $480,844. First quarter of 1943 showed these expenses totaling $438,153, for net profit on operations of $753,709.

Interest on income mortgage bonds was $94,936, with net income, before income and excess profits taxes, of $393,198. Last year, first quarter figures were $108,467 and $527,708. Provision for income and excess profits taxes amounted to $163,600 for the first three months, as against $204,600 a year ago. Gain on first mortgage bonds purchased was $8,225, compared with $20,313 in 1943.

National Pole and Treating Company, 70 per cent-owned subsidiary of Minnesota and Ontario Paper Company, showed net income of $11,627 for the 1944 quarter, as compared with $12,626 a year ago.

Container Corp. Profits Up

Consolidated net profit of the Container Corporation of America for the three month period ended March 31, 1944, after appropriating $200,000 for a war and post-war reserve, amounted to $569,517 compared with $377,359 for the similar period for 1943, equivalent to 73 cents and 48 cents per share respectively on each of the 781,253 outstanding shares of capital stock.

These respective earnings are net after all charges, including depreciation, provision for year-end adjustments, and all taxes. Provisions for Federal taxes for the current quarter are based on the Revenue Act of 1943 and have been calculated under the 80% limitation provision.

Shipments for the three month period amounted to $17,146,153 compared with $12,557,271 for the same period the previous year, and $17,054,619 for the three month period ended December 31, 1943.

Hollingsworth & Whitney Nets $2.78

The Hollingsworth & Whitney Co. reports for 1943 a consolidated net profit of $522,403 after all charges, including $200,000 contingency reserve and $1,074,416 for estimated taxes. Net was equal to $2.78 a share on capital stock. This compares with 1942 net of $635,727, after $300,000 contingency reserve and $2,024,871 for taxes, equal to $3.39 a share. Balance sheet as of December 31, 1943 shows current assets of $5,356,297, and current liabilities of $1,720,578, making net working capital of $3,968,061 on December 31, 1942.

To Offer Flintkote Stock

Lehman Brothers of New York head a group of twenty-four underwriters that will offer 237,902 shares of the Flintkote Company's common stock, no par value, according to a registration statement filed with the Securities and Exchange Commission. The stock is being offered to present common shareholders in the ratio of one share for each three shares held.

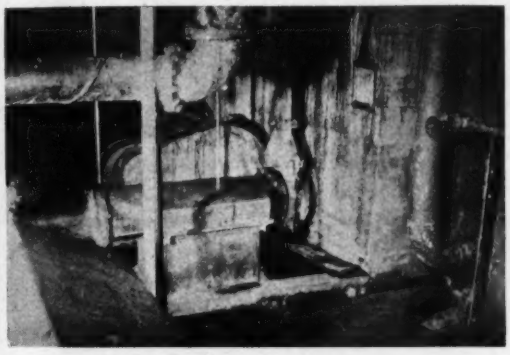
Proceeds will be used for the erection of additional plant facilities if permission and equipment are obtainable. Otherwise, some or all the proceeds may be used to retire outstanding $4.50 cumulative preferred stock or fifteen-year 3% debentures.

Mead Corp. Reports

The Mead Corporation reports net income for 34-week period ended March 18 was $245,218, or 20 cents a share, against $251,173, or 21 cents a share in the same period last year.

Removes Iron from Stock

The latest type of electromagnet to be applied in the paper industry is one of rectangular design, which makes it easily applicable for removing miscellaneous tramp iron from stock. In the installation illustrated, the magnet is mounted face upward in the system, between the storage tank and the pump. The pipe coming from the storage tank is flanged out into a rectangular shape and the magnet installed below this enlargement. Tramp iron present in the liquid is firmly held to the face of the magnet. Approximately twice a day or more, depending on the amount



PAPER MILL INSTALLATION

of iron passing through, the face of the magnet is exposed and tramp iron manually removed. The units are completely waterproof and require no attention other than cleaning from time to time. They are available in a variety of sizes to suit the capacity requirements of the installation. The magnets operate on a direct current that is available in inexpensive electronic tube rectifiers if the plant has no D. C.

One user of such a magnet reports that in one week's time he extracted over two buckets of tramp iron which had been causing considerable damage to his pumps and other processing equipment.

The rectangular magnets are manufactured by the Dings Magnetic Separator Company, 509 East Smith Street, Milwaukee, Wis. Literature containing complete data is available on request to the manufacturer.

Sets Ceiling Prices on Pulpwood

For the first time, the Office of Price Administration today placed price ceilings on pulpwood imported into the United States. The ceilings, which become effective May 1, 1944, are on imported pulpwood produced in the Canadian Provinces of Quebec, New Brunswick and Nova Scotia.

These ceilings are lower than the prices that have been paid for some time by importers of this pulpwood. Importers are mainly New York and New England manufacturers making pulp, paper, paper products and other important items essential to the war program and to the civilian economy. Price ceilings on these products are not affected by today's action. The difference between the new pulpwood ceilings and prices currently being paid by importers varies with each buyer.

OPA pointed out that the Canadian Wartime Prices and Trade Board has informed the War Production Board that price ceilings at the levels established today would not only help to maintain supplies of this pulpwood to United States importers, but would serve to increase those supplies.

"In view of these assurances from the Canadian Wartime Prices and Trade Board to the War Production Board, and in view of the recommendation of WPB to OPA that today's action be taken, the Price Administrator is issuing a new regulation setting ceiling prices on these importations as a means of maintaining supply of this critical commodity," OPA said.

The new ceilings will be the maximum dollar-and-cent prices established in Canada on February 2, 1944, for sales of this pulpwood in Canada, plus 50 cents per cord (Canadian funds) for rough or peeled pulpwood. Actual freight charges from f.o.b. points of shipment may be added. Brokers' commissions of 50 cents per cord for rough pulpwood and $1 per cord for peeled pulpwood also may be added. Most of the pulpwood affected is sold through brokers.

Government is Saving Paper

WASHINGTON, D. C., May 3, 1944—Savings in the use of paper have been achieved by the Inter-Agency Publications Committee of the Office of War Information, the committee announced today. The Inter-Agency Committee was established under OWI Regulation No. 3 and operates in cooperation with other Government agencies.

Some of the committee's savings were the elimination, during 1943, of 258 Federal Government periodical publications out of a total of 705, a reduction of 37% in the number of publications. Of the remainder, 283 were reduced in size. Savings of 246.8 tons of paper in non-periodical publications were also made; mailing lists were cut 38.8%, and reduction in the length of printed periodicals handled through the Government Printing Office, from an overage of 33.8 pages to an overage of 19.2 pages (were some of the savings made.

May Executives Made Partners

The J. L. May Company, 111 West 19th street, New York, manufacturers of the widely-known Maco line of tags, tickets and labels, has announced that two top executives of the May organization have been taken into partnership.

They are B. B. Matzner and I. B. Gluck, and the action taken is in token of their signal service in the upbuilding of the May organization during the past two decades.

Mr. Matzner, who is in charge of purchasing and cost finding for the company, and Mr. Gluck who is plant superintendent, have been associated with the development of the Maco line for more than twenty years.

As partners in the company they will continue to cooperate in meeting current heavy demand for Maco products and in planning for the expansion of the organization and its line in the post-war years.

Capt. Donald Westerbeke Missing

Captain Donald G. Westerbeke, formerly of Neenah, Wis., an employe in the technical department of the Marathon Paper Mills from November, 1939, until his enlistment in January, 1942, has been reported missing in action over Germany. A few months ago he had received the distinguished service cross for his share in a low level bombing attack on August 1, 1943, on the Ploesti oil refineries in Rumania.

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

Henry J. Berger
EDITOR

No. 118 May 4, 1944 No. 18

COMING EVENTS IN PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

CHICAGO PROFESSIONAL PAPER GROUP—First Monday of each month except July and August at Chicago, Ill.

AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION—25th Anniversary Convention, Edgewater Beach Hotel, Chicago, Ill., May 24, 25 and 26.

PRICE MAKING

A discussion of the fundamental principles of free enterprise, constructive competition and long-range profit motivation for all business men, is the purpose of "Price Making in a Democracy," by Edwin C. Nourse. The book is published by The Brookings Institution, Washington, D. C., an organization primarily engaged in the development of sound national policies and training in the social sciences. Although the author is an advocate of free enterprise, he argues that it means freedom for everybody and must be enterprising and not merely protective. The discussion is mainly directed to the practical issues of the reconversion period. Some of the chapters have appeared in a series of pamphlets during the past two years, many of which have been quoted. In its three parts, the book discusses the principles of free enterprise, the problems and its prospects.

In his explanation of automatic and authoritarian price fixing, Mr. Nourse states in part: "In our own country we have had a small but growing amount of price-fixing by government authority. In the main it has been limited to public regulation of prices charged by private producers, the object being to protect consumers by setting maximum prices or to protect producers by setting minimum prices. Examples include public utility regulation, railroad rate control, the Guffey coal acts, and both federal and state milk controls. More general schemes of price-fixing reappear perennially as proposals for dealing with the agricultural problem, and the ultimate scope and character of price control under the war influence is yet to be seen. Abroad, we see comprehensive systems of authoritarian price-fixing under Communism, Fascism, and the National Socialism of the Third Reich. Many of them go beyond the regulation of prices and rates charged by private business to include prices fixed by government agencies which are themselves producers. It is indeed a striking feature of experiments which begin with mere price regulation that they rapidly spread to ever wider controls over the field of business. Once a price or group of prices has been formulated and promulgated, the control agency may find itself called upon to take active steps to support and effectuate it in the market. The productive system, bereft of the former free price guidance, however perfect or faulty, must be directly controlled as to its technique, volume and timing of investment, choice of goods to be produced, and their volume and quality. The ultimate end toward which such a development tends is a planned economy in which production must be scaled, supplies rationed, priorities established, techniques adjusted, capital channeled, labor mobilized and controlled to put the public's consumption and the business world's system of production in working harmony with the official price structure."

In discussing competition, Mr. Nourse says in part that, "'The goals of traditional competitive business must be served: it is not necessary—not indeed possible—that they be served by methods that in outward form preserve the aspect that we have been accustomed to describe as competition. Instead of personal struggle, there must be economic statesmanship at the centers of control which are inevitably thrust into being by the development of our technological processes. This shifts competition from the unorganized spontaneous response of the masses to the organized but locally autonomous direction of a relatively small executive personnel. The real need is that business men shall accept these objectives and set about perfecting processes compatible with modern industrial requirements through which they can be attained."

In reference to the criteria of price policy, Mr. Nourse points out that, "Recent experience would suggest that to many business men any government promise of employment opportunities to all through public spending constitutes a threat of national insolvency, inflation, confiscatory taxation, and everything that makes private business impossible. If this psychology should prevail after the war, every step that government might take in accepting or asserting responsibility for the productive operation of the economic system would cause private enterprise and private capital to withdraw in uncertainty and fear. . . . To others, even among business men, such a government underwriting of employment is seen as a guarantee of sustained markets which makes business commitments safe. . . . Hence we insist that the criterion of full employment does not, on the plane of mere engineering and commercial planning on which it is currently being promoted, furnish an ade-

quate criterion of management either to supersede or to supplement the traditional criterion of 'maximum profits for the owners.' Pricing for full sale must be an inseparable part of planning for full-scale production. . . . In considering whether or by how much wage and tax increases can or must be absorbed in the schedule of prices inaugurated after the war, business managers must consider not merely changes in technical or organizational efficiency which have taken place during the war period or been made available for introduction into peacetime operations. They must also consider defects of adjustment that existed before the war—not just in the late thirties, but back to the first World War."

In concluding his chapter on prospects through the utilization of scientific aids, Mr. Nourse says in part: "To see good prospects of success along such lines of managerial policy we must assume that many managers would be working on this same principle of business administration, looking to a reasonable share in the benefits derived from promotion of maximum production, rather than exploiting a strong position of relative scarcity for their particular product."

Seaboard Paper Stock Co. Incorporates

BOSTON, Mass., May 1, 1944—The Seaboard Paper Stock Company, 70 State street, this city, has been incorporated with Walter J. Murphy, Beechwood, Cohasset, Mass., as president and treasurer; Louis H. Sawyer as clerk, and George N. Jacobs as the third incorporator.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1944		Corresponding Weeks—1943	
March 18	92.2	March 20	88.9
March 25	90.3	March 27	90.6
April 1	88.0	April 3	88.6
April 8	88.2	April 10	89.9
April 15 (Revised)	86.7	April 17	89.3
April 22	*91.3*	April 24	89.7

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1943	87.2	88.9	89.5	88.7	91.4	84.8	84.3
1944	89.6	89.6	*90.1*	....	....	....	....

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1943	91.0	88.3	89.6	89.6	82.0	87.8

COMPARATIVE YEARLY SUMMARIES

	1937	1938	1939	1940	1941	1942	1943	1944
Year to Date	89.6	67.4	80.0	85.1	90.4	102.9	88.8	*89.9*
Year Average....	79.8	71.5	83.4	85.6	97.4	90.4	87.8	

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1938	56	63	63	60	60	59	59	69	70	73	67	61	64
1939	65	73	76	74	69	73	68	77	82	91	88	77	77
1940	78	75	74	76	82	85	77	79	78	85	83	77	78
1941	81	88	89	89	91	94	92	98	95	99	98	90	92
1942	102	101	101	95	82	72	68	75	76	81	82	77	84
1943	86	88	94	94	96	94	89	96	94	94	93	87	93
1944	90	96	*95*										

Week ending Mar. 18, 1944—95 Week ending Apr. 8, 1944—94
Week ending Mar. 25, 1944—97 Week ending Apr. 15, 1944—92
Week ending Apr. 1, 1944—93 Week ending Apr. 22, 1944—*98*

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

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OF AMERICAN PULP

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SOUTH AMERICA
AND ALL WORLD MARKETS

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BIGGEST ADVANCE EVER MADE
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Typical installation of Foxboro Pneumatic Loading on wet press in Canadian mill. It maintains calibrated pressure at each end of roll, and furnishes continuous records.

Foxboro Pneumatic Loading gives calibrated "cushioned" pressure with fingertip control!

With a simple twist of two knobs on an instrument, you can exactly adjust and equalize the pressure at both ends of any pressure roll equipped with Foxboro Pneumatic Loading!

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That is just a quick outline of the Foxboro development which is improving paper production wherever loaded rolls are employed. On calenders, Foxboro Pneumatic Loading Systems maintain uniform caliper, lengthwise and across the sheet. On wet presses, they enable *maximum* moisture extraction through more-exact adjustability . . . and *uniform* extraction across the sheet, through independent adjustment of each roll-end.

Get full details of this important advance in roll loading. Write for Bulletin B-306. **The Foxboro Company, 114 Neponset Avenue, Foxboro, Mass., U. S. A.** Also Montreal, Canada. Branches in principal cities.

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REG. U. S. PAT. OFF.

Section of the
TECHNICAL ASSOCIATION
OF THE PULP & PAPER INDUSTRY
122 E. 42nd St., New York 17, N. Y.
Edited by R. G. Macdonald, Secretary

Substitution Products in the Manufacture of Printing Inks*

By G. L. Erikson[1]

Abstract

The importance of the various raw materials which are used in the manufacture of printing inks, in the production of war equipment is stressed and their relative availability at the present time for uses other than for war, is indicated.

The printing ink industry very early in this war felt the shortages of raw materials, especially colors and resins, and the twin printing ink orders which were issued back in April 1942, were designed to provide relief in the form of preference ratings in exchange for certain restrictions. Preference Rating Order P-94 gave the printing ink industry an A-5 rating for the purchase of specified quantities of certain raw materials. Conservation Order M-53 imposed quota restrictions on the use of certain colors, restricted the use of toners in black inks, prohibited the use of toners in news inks, and prohibited the use of phenolic and phthalic alkyd resins in the manufacture of gloss inks, overprint varnishes, and nonscratch inks.

These orders started the process of substitutions. Subsequent developments in the various classes of raw materials have kept the substitution process fairly continuous. Shortages in colors, driers, resins, metals, chemicals, oils, plasticizers, solvents, and containers, have all kept the printing ink maker busy trying to find substitutes.

And yet, with all these changes and substitutions, a large number of printing ink formulas have remained substantially unchanged. This is particularly true in the case of the average job and commercial printing inks and to a lesser extent in containers and wrapper inks. The average small ink manufacturer is rather fortunate in this respect, because in general his business is largely confined to these relatively unaffected types of inks.

Radical changes have, of course, been necessary in aniline, gravure, and news inks as well as in gloss and nonscratch inks, overprint varnishes, and in most of the specialty inks, too numerous to mention. And in many cases radical changes have been necessary so that ink makers might keep within the quotas of the numerous orders under which they operate.

War Uses

It is not news that this war is a war of materials, manpower, and transportation, in unheard of quantities, and yet, perhaps some do not realize how closely related the materials of war are to every day materials. It is not difficult to understand the shortages in steel as this is seen in the finished war equipment, ships, tanks, guns, etc. The other metals which are used daily in printing and ink making such as lead, copper, zinc, aluminum, antimony, tin, manganese, tungsten, chromium, cobalt, and nickel are also very important for airplanes, bullets, bearing metals, alloy steels, tools, etc.

The same basic raw materials used for making drugs, perfumes, colors, dyes, etc., are also used for making explosives.

From toluol many of the best colors are manufactured, such as lake red C, peacock blue, hansa yellow and many others, and it is also the raw material from which T.N.T. is made.

Phenol is used to manufacture resins for gloss ink and also the explosive "picric acid" used extensively in Russia.

Glycerine makes printers' rollers and also nitro glycerine.

Phthalic anhydride produces beautiful colors and also produces one of the necessary ingredients in smokeless powder, as well as paint resins for planes and ships.

Chromium is used for making chrome yellow, also for alloying steel for ships, guns, tanks, etc.

From benzol, dyes, drugs, perfumes, resins, synthetic rubber, aviation gasoline, explosives, and many more civilian and military items are produced.

Cobalt is the most important dryer metal, but it is also needed for alloying steel for guns, etc.

Lead also is used to manufacture chrome yellow and plenty of lead must be propelled in the direction of the enemies in the form of bullets.

Tin was extensively used for tin cans, but because of the acute shortage in this material, very little tin has been used for this purpose for many months. Most of it must go into bearings for airplanes, tanks, etc., and into many other war uses.

Aluminum has been saved for planes and for es-

This paper must be considered as wholly unofficial in character.

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sential painting on ships, etc., where the saving in weight of the paint is considerable and allows more capacity for vital war materials, men, etc.

Toners for news ink, and for black halftone inks, are made from aniline oil which is also used for "tetryl," the torpedo explosive, and since the situation on aniline oil became critical, no ink maker would want to take any torpedoes away from the Navy in order to add toner to black ink.

Material Controls

All critical materials are rapidly being brought under "Allocation Control." Whenever it appears that there will not be enough of any commodity to supply both the armed forces and all civilian needs, this type of control is necessary in order to insure the flow of this material into the most essential uses.

The rating system has not properly controlled the flow of materials, due primarily to the fact that more high ratings were often issued for a commodity than was available and this caused a scramble to obtain the material and some important war uses were not supplied, because some less essential users had obtained all the material available.

The so-called "Pattern Ratings" and "MRO Ratings" have helped to cause the "rating inflation" which has been responsible for improper distribution of certain chemicals and materials.

The most effective control of those critical materials recently has been by "Allocation Orders" and by "Limitation" or "Quota" orders containing end use restrictions, and the printing ink industry now operates under a large number of these two types of orders.

Raw Materials

Substitutions in the manufacture of printing inks are discussed by dealing with the broad classes of raw materials, mentioning only a few outstanding individual items.

Metals

The chief metals which have affected the printing ink maker are: aluminum, copper, cadmium, chromium, iron, lead, mercury, molybdenum, tungsten, tin, and zinc. Substitutions necessary on account of shortages of these metals have not too seriously affected the printing ink maker, and with the exception of cadmium and tin these metals are generally in easier supply than they were a year ago.

No doubt all have heard a great deal about the easier metal situation in the last couple of months, but do not make the mistake of assuming that all other materials are also easier or will be in freer supply shortly.

The supply of chemicals in general, is not affected by the supply of metals. There may be metal available for iceboxes but there may not be alkyd resins available for finishing these iceboxes.

Oils

The printing ink industry normally uses 20 to 25 million pounds of various oils and fats exclusive of the petroleum oils; prior to the war 70% of this was linseed oil, about 13% was tung oil and the balance was perilla, castor, cottonseed, soyabean, fish oil, oiticica oil, and many others used in small quantities for special purposes.

During 1943 linseed oil accounted for over 95% of the total fats and oils consumed in ink (also of course, exclusive of petroleum oils.)

With tung, perilla, and castor oil unavailable except for the most important military uses, ink makers substituted various treated linseed oils for those specialty jobs where the hard oils formerly were used, and the extent of substitution is indicated by the above figures.

Castor oil has recently been in more plentiful supply and if this condition continues, the dehydrated castor oils will be used more liberally by ink makers during this year. Oiticica oil also may soon be more available and these two oils offer reasonably satisfactory substitutes for tung oil which will probably not be available to the ink maker for the duration.

On account of the 90% restriction on the use of fats and oils by ink makers under F.D.O.-42 it has been necessary to use substitutes for linseed oil in a few places. Rosin oils, tall oil, and mineral oil varnishes have served as substitutes in most of these cases. Also there has been some shift from drying oil to petroleum oils because of the increase in the use of the heat setting types of inks.

The 110 million pounds of petroleum oils normally used by the printing ink industry annually, have been freely available with transportation being the main problem.

Resins

With the early restrictions on the use of phenolic resins and glyceryl-phthalate resins in gloss inks, nonscratch inks, and overprint varnishes, the ink makers turned first to pentaerythritol resins, then when these were cut off, to maleic resins and numerous other special types, and now the situation has just about reversed, with maleic resins much more critical than phenolics, so that it may be advisable to return to phenolic resins in order to release the more critical resins for military uses.

Shortages of shellac gave some real headaches to the aniline ink manufacturers and after many valiant attempts to eliminate shellac entirely, it was necessary to make limited quantities available for certain types of aniline inks.

Other resins which have been in short supply for ink making include such types as ethyl cellulose, nitro cellulose, urea formaldehyde, melamine, zein, stabilized rosin, acrylic, methacrylates, polystyrene, vinyls, and mineral oil polymers.

At one time even ester gum was very short and it seemed as though the ink makers would be left with only plain rosin, but recently the glycerine supply situation has eased enough to permit free usage in resins.

Pigments

Under Conservation Order M-53 issued April 1, 1942, the printing ink industry was restricted to 70% of its 1941 usage of chrome yellows and organic pigments by classes. Later, the chrome yellow percentage was raised to 100% and on January 1, 1943 all color consuming industries became subject to M-103 the dyestuff and organic pigment order. This change had the effect of removing restrictions on the use of chrome yellows and certain organic pigments, chiefly the lithol toners.

The 60% quota of M-103 made a number of substitutions necessary. Lithol toners were substituted for red lake C and a few other red pigments. Chrome yellows were substituted for certain organic yellows, and iron blues were substituted in small percentages for certain organic blues, wherever possible. The restrictions of M-53 pertaining to the use of toners in black inks have been retained and this restriction

has helped ink makers keep within their pigment quota.

The present 70% quota of M-103 relieved the organic pigment problem considerably, but with that relief has come the new problem of the shortage of chrome pigments, which is the present No. 1 pigment problem of the printing ink manufacturers.

The chrome pigment shortage affects mostly yellow printing inks, and the situation is aggravated by the fact that the most suitable substitutes are organic yellows such as hansa yellows and benzidine yellows which are also in extremely short supply, as they require chemicals used in production of atabrine, the antimalarial.

It is hoped that some new yellow pigments made from noncritical materials will appear on the market very soon, and with these and the organic yellow pigments available, and considerable reduction in color strengths in most yellow inks, the industry expects to be able to meet the demands made on it for yellow printing inks. The chrome pigments are controlled by order M-370 which permits for the manufacture of printing ink, the purchase and use in any calendar quarter commencing January 1, 1944, of 12½% of the quantity of class A pigments acquired in the year 1941 for that purpose. This represents a 50% quota.

Titanium pigments are also in very short supply at the present time and it has been necessary for ink makers to substitute other opaque whites wherever possible. Zinc sulphide, zinc oxide, and lithopone are suitable in some instances as substitutes for titanium pigments, but in most cases the shortage is creating some very serious problems for ink makers.

Furnace type carbon blacks which are required in the synthetic rubber program have been replaced with channel blacks in printing inks. There appears to be no impending shortage however of suitable black pigments.

Mercury vermilion was largely replaced by molybdate orange a year ago, but now molybdate orange, which is a class A chrome pigment, is under the 50% restrictions of order M-370 for printing ink use, and the mercury pigment is much easier. But the problem here is one of cost, mercury vermilion costing nine or ten times the cost of molybdate orange.

Numerous other pigments present substitution problems when there is a temporary shortage, but the ingenuity of the ink maker is always up to the problem at hand.

Up to now, carbon blacks, iron blues, and certain inert whites have been relatively easy to obtain in sufficient quantities.

SOLVENTS

The solvent problem has affected mostly the aniline, gravure, and specialty ink makers. In these fields a great deal of reformulating has been necessary to conform to the changing supply picture of the various solvents.

DRIERS

Naphthenate driers were not available for several months except for very good end uses, but they are now fairly free, and while they were short, substitution was fairly easy. Cobalt, the most important drier metal, was always made available by W.P.B. in sufficient quantities for drier use.

CHEMICALS

A large number of other chemicals have directly or indirectly affected printing ink materials, but a discussion of these would be outside the scope of this paper. It is sufficient to state that a short supply of almost any chemical, organic, or inorganic, will make itself felt on some raw material used by the ink maker.

CONTAINERS

The conventional "tin" can for printing ink first gave way to black plate cans, then later to the fiber containers when M-81 gave the industry a "50% of 1942 pack" quota and restricted the sizes which could be manufactured. This quota was later raised to 60% and under the amendment of January 3, 1944, a quota of 80% of 1942 pack was assigned. This reflected the generally unsatisfactory nature of the small fiber containers for printing ink as well as the tighter paper and fiber situation and the easing of metal.

Steel kits and drums have presented serious problems in connection with recapture and cleaning, especially in the smaller sizes. Small sizes of fiber drums have been fairly satisfactory, but in general not easily obtainable, and offer no possibilities for re-use.

Therefore, a few new kits have been permitted under appeals to Order L-197. By proper conservation and care ink makers should be able to make a minimum of containers serve the purpose.

TAPPI Notes

Max R. Oberdorfer of the St. Helens Pulp and Paper Company, St. Helens, Ore., has joined the Armed Forces and is now in Seattle, Wash.

Charles R. Outterson, consultant, is now with the General Ceramic, Keasbey, N. J.

H. N. Lee, formerly consulting microscopist, is now a research microscopist for the Fabric Research Laboratories, Inc., 665 Boylston St., Boston, Mass.

James C. Kimberly of Neenah, Wis., is now located at the Shoreham Hotel, Washington, D. C.

Melvin P. Riehm, formerly of the Philip Carey Company, is now superintendent and manager of the Lancaster, Ohio, mill of Loroco Industries, Inc.

Charles M. Sigvart, formerly of the Institute of Paper Chemistry, is now assistant to the technical director, Scott Paper Company, Chester, Pa.

Jack J. Yirak, formerly of the Institute of Paper Chemistry, is now chemical engineer for the Union Bag & Paper Corporation, Savannah, Ga.

Arno W. Nickerson is now located at 441 Lexington avenue, New York 17, N. Y.

J. P. Rubush, formerly of the Swenson Evaporator Company, is now vice president of the Goslin-Birmingham Company, New York, N. Y.

W. O. Hisey is now on leave of absence from the New York State College of Forestry, Syracuse, N. Y., and will be consulting engineer for the South African Pulp and Paper Industries at Transvaal, South Africa, for the next eight months.

John Beaujean is now superintendent of the tallol plant of the Union Bag and Paper Corporation, Savannah, Ga.

The Pacific Section of the Technical Association will meet at the Multnomah Hotel, Portland, Ore., on June 3.

Streamlining Papermill Design*

By Kurt Wandel[1]

Abstract

The point is stressed that only a combination of equipment with proper arrangement and layout will bring results toward greater output, lower costs, and a wider range of papers. A new installation with all equipment arranged compactly on a single floor level is described and recommended as operated in a mill now running 3 years. In this mill all stock enters at one point through a pulper after which it is refined, jordaned, and goes into the paper machine within a space of 50 feet. Chemicals are fed continuously. The paper machine is built entirely of welded steel including the two 10 foot diameter Yankee driers which do all the drying for a speed of 1,200 feet per minute. Automatic controls simplify operations. A closed system for water is established.

Changes in existing mills are recommended for streamlined production on basis of results obtained in the modern mill described. Opportunity is pointed out for greatest effect in revamping older installations by abandoning entire dryer sections in favor of two or three Yankee driers for a great number of papers.

Paper is made from suitable fibers which are first subjected to treatment on a succession of machines and then "assembled" with proper admixtures on a paper machine into a continuous web. A great deal of thought and energy is being spent on the individual machines and equipment and much has been accomplished. Nevertheless, it is only a *combination of equipment* which will bring results in increased and lower cost production in the change over from one class of paper to another in an effort to improve quality or in the development of new papers. The combination of equipment must have the correct arrangement and layout. A streamlined flow of stock and water must be established from the feeding in of the pulp or waste paper to the reel of the paper machine. The construction and the location of the paper mill also has a bearing on its basic cost of operation.

Many paper mills were established years ago consequently their present location and construction are due to conditions prevailing then. Conditions have changed and will change. Water power is no longer a consideration except for mills using and making groundwood in quantity. A large supply of water has been made of less value because of the restrictions placed in so many locations on the discharge of white water which have forced some mills to revamp their entire water system to be allowed to continue operations. A supply of pulp may be had at most any point with adjusted freight rates and particularly so with favorable water transportation.

Paper machines have been set up and are still being erected for second floor operation which is equivalent to being put on stilts in spite of the fact that machines are getting heavier. Many a beater room floor has given out with bedplates sagging to the point where the rolls can no longer touch them or the floor has collapsed entirely as has happened with disastrous results. Basements cannot help but harbor neglected equipment. The ever present water will deteriorate machinery and foundations. The separate beater room usually has men or women feeding in pulp sheet by sheet and ounces of dyestuff, pounds of size, alum and whatnot. These operations are removed from the machine room where the machine tender has the responsibility of making paper from the mixture another prepares. He is lucky if he has a jordan under his control to straighten himself out. Waste water and fiber shrinkage is an ever present problem with savealls only partly a solution.

In the consideration of an up-to-date new mill, location, construction, and layout are the three outstanding factors. Location determines the cost and supply of raw material and has a bearing on the ready distribution of finished paper and paper product. Construction and layout largely control cost of conversion. All three factors bear on the cost of investment in relation to output.

Plant Layout

If the layout of the paper mill is considered first, it is found desirable to have all equipment arranged in as compact a manner as possible readily accessible to operators. The paper machine and other heavy machines must be on a solid foundation to function properly. These requirements suggest a single floor mill which offhand appears out of the ordinary. Nevertheless, such a layout is possible, practical in every respect, and carries with it great advantages. Figures 1 and 2 show a one-machine paper mill, laid out on one floor level, making about 75,000 pounds of napkin and toilet paper per day. It is also capable of making M.G. papers as well as facial tissue. All machinery is mounted on concrete foundations poured into the ground. Pits of various depths are used between machine foundations and in back of the paper machine. Figure 3 shows a tile lined pit under the wet end of the paper machine in which part is used for mixing stock with white water and for the vertical circulation pump, and the other sections for wire and shower water and felt washing.

A large pit on the dry end houses the second Yankee dryer with which this machine is equipped. A shallower pit is arranged to allow calenders, reel, and rewind drums to be mounted directly on the solid bedplates. The drive shaft supports in the rear are set in concrete. On any part of the paper machine, vibration is absolutely absent, even at the highest speeds. In the stock preparation end every piece of equipment is directly accessible. Its arrangement is compact and uses barely 50 feet beyond the paper machine.

Mill Operation

In the operation of this mill, all stock enters at one point through a pulper which is in reality a large round chest having an impeller disk at the bottom. The rapid rotation of the impeller creates a vortex which sucks bundles of pulp or waste paper against small steel blades mounted on the face of the impel-

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[1] Member TAPPI; Consulting Engineer, Honey Brook, Pa.

ler tending to quickly disintegrate the fibers with the least amount of power and without cutting the fibers in any way. The pulper is first filled with water preferably from a storage tank of white water. Pulp, waste paper, or broke are prepared in weighed lots on a roll conveyor on the floor from which they are pushed on to an inclined elevator, which dumps the loads into the pulper 1,000 pounds or more at a time. The operation of disintegration takes from 15 to 30 minutes during which time the conveyor is loaded again. The capacity load of the pulper is about 3,000 pounds and constitutes the only batch operation in the mill.

Refining

The pulper empties into an adjoining chest through a stock pump mounted at the end of the chest. This pump circulates the stock in the chest, as well as a given amount through a large capacity refiner next to the pump. From the refiner a predetermined amount of stock is bled off to the machine chest to keep same approximately at full level. The stock averages several passes through the refiner. This treatment may be varied through the setting of the refiner or the quantity of stock allowed to go through. The refiner finishes the job of disintegrating the fiber and touches it up to a degree, whereby the jordans can do the rest of the work in hydrating and preparing it for the paper machine. The stock in the machine chest is also circulated through a rotary stock pump. A smaller pipe from this pump leads to a stock consistency regulator mounted on top of the machine chest in which a certain amount of stock is thinned out to the proper consistency, and an automatic regulator furnishes the stock to the jordans while the surplus stock returns to the chest. The stock regulator is equipped with a gate operated by a reversible electric motor for more or less stock. This regulating device is operated with two push buttons, located at the paper machine proper and near the paper scale so that the machine tender has an opportunity to adjust his weight as soon as he determines a change is required, with no unnecessary steps taken. The jordans are mounted and piped in the usual manner. They discharge into the pit in the rear of the paper machine for mixture with the white water and chemicals.

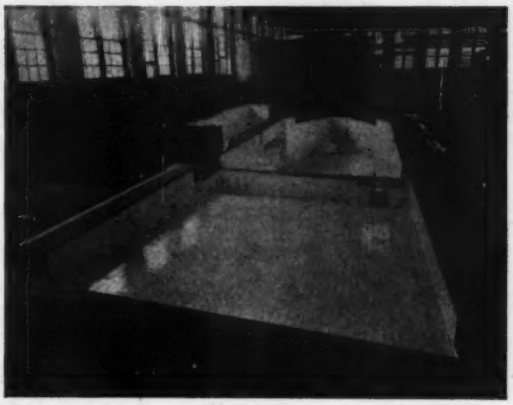

Fig. 3
Tile Lined Pit

Addition of Chemicals, Etc.

While there may be some reasonable difference of opinion, it has been found in the operation of the mill described, that the addition of size, starch, alum, bentonite, dyestuffs, or other ingredients required for different grades of paper will produce better results if added in the mixing pit close to the inlet than when added in the pulper. Since such was found to be the case, this fact was taken advantage of by installing automatic feeding hoppers on top of the machine chest through which various chemicals are fed automatically in quantities prescribed and in proportion to the speed of the paper machine and the paper made thereon. Bentonite drops into a water mixer from which it passes to a tank where the starch is added and prepared. After mixing it is then bled into the

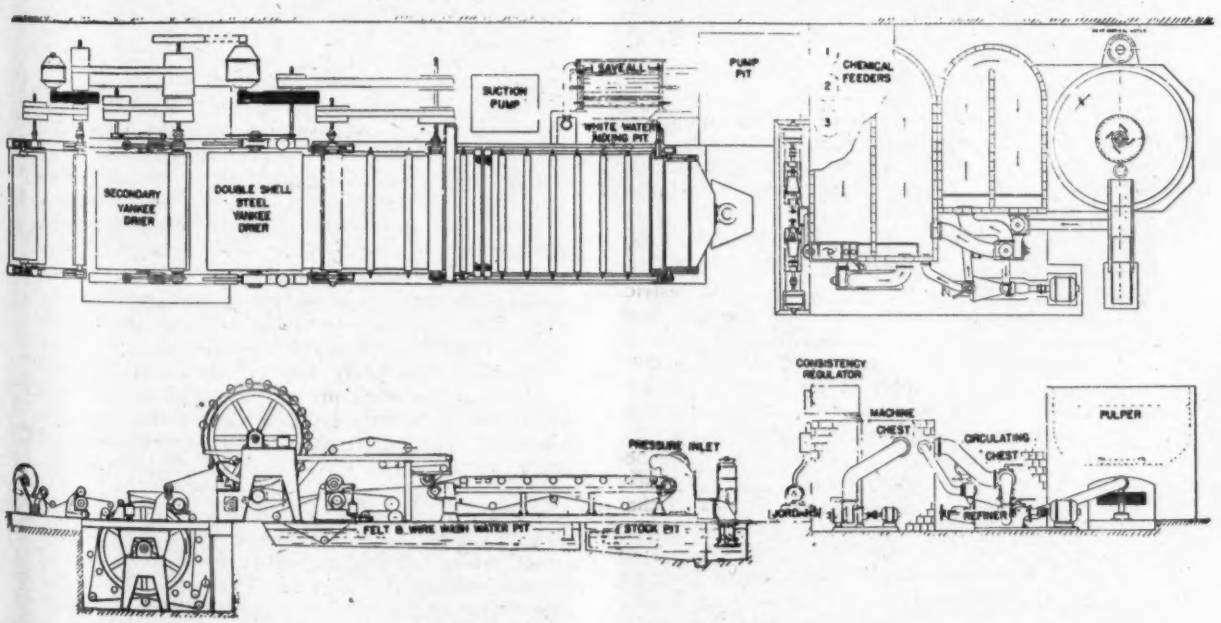

Fig. 1 (at Bottom) and Fig. 2 (at Top)

stock close to the circulating pump. Size and alum are handled both in the pulper and continuously. Dyestuffs are dissolved in water in a predetermined proportion and fed to the stock in liquid form. The procedure of automatic feeding of these ingredients has been followed by other mills for years.

Paper Machine

In the paper machine as shown an overall feature is its construction of welded steel throughout. Physically steel is three to six times stronger in tension and stiffer than cast iron. Welded steel is more adaptable for bringing out improvements in design held back in many cases on account of the cost involved through change of patterns. Certain sections can only be made of welded steel construction as for instance the pressure inlet which is made in one piece.

Wet End

The inlet lip is stably suspended over the wire past the breast roll. The lip may be adjusted as a pressure lip discharging the stock at an angle of about 30° to the wire or it may be adjusted to discharge the stock on a plain level with the wire for different types and weights of paper.

The circulating pump is of a vertical propeller type, which lifts a large volume of water with temperate speed as compared to the use on many paper machines of pumps with high discharge velocity requiring large headboxes and various distributors to give the stock a chance to calm down again for good formation. In this case the stock is simply pumped on to the wire. The proper nozzle velocity at the inlet lip is obtained and held by varying the speed of the pump for big changes and a bypass valve is used for fine regulation. The pump is never choked.

The entire fourdrinier frame, breast roll, couch roll, table rolls, suction boxes, and white water pan are all suspended permanently from the rear by means of heavy welded steel beams which could not be made of cast iron. A quick wire change may be effected without moving the inlet or any other part of the fourdrinier frame except some filler blocks which are put in for steadying the front of the section during operation.

Dry End

The Yankee driers are made of welded steel. This construction allows a double shell arrangement confining the process of condensing steam to an annular chamber of only 2 inches between outer and inner shell, Fig. 5. Much has been said and written about drainage of condensate from Yankee and ordinary size driers and the inefficiency of drying sections is

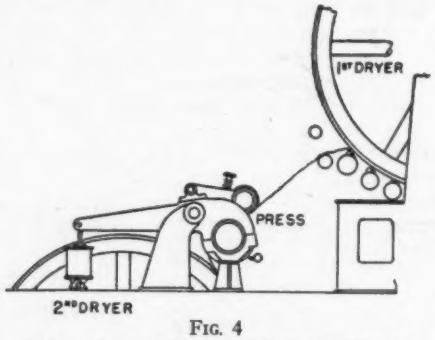

Fig. 4
Making Crepe on Wandel Dual Yankee Machine

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Fig. 5
Yankee Drier

blamed on faulty condensate removal. It is almost certain that the fault lies in the air not being drained out of the driers. An ordinary Yankee drier, for instance, cannot help but act as an accumulation chamber for air. With the double shell construction, the air is removed with the condensate continuously with the result that on the machine illustrated, the first drier never operates with a steam pressure over 15 pounds at a machine speed of 1,200 feet per minute, and evaporates as high as 20 pounds of water per square foot drier surface covered per hour, so that the sheet comes off the first drier at 80% dry. An efficient predrying Yankee drier of this type may be installed to great advantage on any machine requiring added drying capacity as pointed out in "The Function of a Yankee Drier on a Paper Machine," a paper published two years ago. The first Yankee drier may also be used for creping as shown in the part drawing Fig. 4. Any grade of paper from the lightest to the heavier grades may be creped here at a predetermined moisture content.

The second Yankee drier finishes drying the papers made on this machine and takes the place of a number of smaller driers. This second drier may give the sheet an M.G. finish on the reverse side if so required or a dull finish may be retained on both sides with the installation of a wet smoothing press in between.

The calender rolls of which there are only two in the machine shown, are set close to the bedplate. On large stacks it would be advisable to set the bottom roll low in the same manner. The reel drum is mounted the same. The construction of the slitter and rewind drums is such that they rest directly on the foundation avoiding all frame work and consequent vibration. There are three motors driving the machine, all d.c. variable speed type. The individual adjustments are with cone pulleys which work very well at the higher speeds. Because of the compactness of the layout, no counter or line shafting is required. The 100 hp. motor drives the wet end of the machine when creped paper is made, the 50 hp. motor driving the second drier, calenders, and reel. On flat papers, the 100 hp. is found sufficient to

drive the entire machine with a direct belt hookup for the dry end. A more modern electric drive, but at a higher initial cost, might be found in the use of individual motors.

CONTROL

Since control is the watchword for efficient operation, the dual Yankee machine is equipped with pneumatic loading throughout. The upper couch roll is raised or lowered with the turn of a simple valve. Any pressure may be had on the press rolls and the pressure roll, with individual adjustment for front and back with gauges indicating the exact pressure used. There are three doctors on the first Yankee drier operated with compressed air, both as to pressure and oscillation. The reel drum is moved with compressed air. These controls contribute to the easy operation of the machine as well as to the precise handling of all adjustments.

WASH WATERS

An outstanding feature of the installation of the machine shown is the handling of the felt wash water and the wire shower water. The wet felt passes through a water bath in the pit between the machine. A press squeezes out the surplus water from the felt. The pick-up felt is washed with a small stream of water which is being carefully returned to the pit. From there the water is passed to the rear of the machine through a channel at the end of which is a vertical pump lifting the water into a saveall, which acts as a filter and returns any fiber in the water directly into the mixing pit. The amount of fiber thus recovered and returned is in proportion to the stock furnished and does not change the weight of the sheet. The strained water is partly used over again through the showers on the wire. It can partly be used as makeup water in the pulper and for thinning in the stock consistency regulator. The balance of the water may be made ready for final discharge by having it cleared chemically or mechanically, or both.

Labor Requirements

The compactness of all the functions of the mill described has brought about a change in the manpower setup, inasmuch as a machine tender can be trained and be placed in charge of all operations from stock preparation to finished paper. On the one end there is a laborer furnishing the pulper. One man can do this job on each shift. During the day a gang with trucks supplies the vicinity of the pulper with raw material, dumping same wherever required. The machine tender sets the refiner, jordans, chemicals, pH and all other variables. It is easy to oversee the entire process. Meanwhile, the backtender and helper are kept busy on the reel and rewinder. The mill becomes a four men per shift operation, with a part time upkeep man and a bull gang for receiving and shipping. In addition, of course, there should be a superintendent for proper supervision and training.

The production of steam for drying or power is not given here because of varying local conditions. Nevertheless, it may be added that the steam consumption on a machine as shown and running on light weight paper is such that steam generated at 150 pound steam pressure may operate a variable speed steam turbine furnishing the power for the paper machine and enough steam over at 25 pound back pressure to dry all the paper. The total power consumption on the mill unit as described is 600 to 650 hp.

An important utilization of the heat in flash steam and condensate is found in air conditioning of the machine room which has a great deal to do with uniform drying results. On the face of the Yankee drier an ample supply of heated air is used for complete absorption of the evaporated water from the sheet. The volume of this air is too great to be removed in a closely fitting hood, and it has been found more efficient to arrange for a spacious superstructure above the Yankee drier into which this air flows of its own accord and at the top of which, it is sucked away by a fan.

The investment in a mill unit as described is lower per ton of paper than in a more complicated mill, because of its compact layout, simple building requirements, and productive efficiency.

Location

The location of a new paper mill may be described by consideration of two main factors—supply of raw material and ready distribution of its products. A newsprint mill has no problem of distribution and a strong dependence on supply of raw material. Mills taking advantage of the new processes of using southern woods must located within the area of their supply of wood. Board mills must be fed by great tonnages of waste paper best obtainable near population centers. There still remains the opportunity for many mills using pulp only or part pulp and waste papers to be close to large cities for prompt distribution of their product to converters or consumer agencies. These mills will enjoy a decided advantage with their customers: their deliveries are apt to be more reliable and prompt and their service more acceptable. The use of a nearby supply of waste paper and improved processes of deinking may substantially reduce the cost of furnish for many grades. More mills thus located will find it acceptable to go into converting partly or altogether. Their paper machines produce and their auxiliary equipment convert under one roof, preferably on one floor on a 24-hour basis. Executive and sales offices are located at the mill.

Many paper mills will be strained by competition from the newer mills already constructed and planned for the future. Their prospects, however, are not too bad if they will adapt themselves to changed conditions and profit from developments in the industry. The older mill has a few advantages. First of all and most important, the average mill has a skilled and experienced organization, a combination of men from the superintendent down capable of operating a mill and making paper. If these men are given improved tools, they will produce more and better paper at a lower cost. The art is to recognize bottlenecks in the layout and the equipment of their mills. A lot of mills have been added to and kept up. They must go further and adopt new ideas. They must recognize certain trends and the importance of basic improvements in relation to their more or less fixed conditions.

Recommendations for streamlining paper mill production cannot be given to cover all needs. Conditions vary too much for that. A great number of improvements for mills of all sorts may be classified and listed.

Proposed Improvements

Stock preparation in most mills is still done batchwise. The beater is not necessary with the use of

most pulps and actually disadvantageous for waste paper. Any mill can change that with saving in space and power. Even today, a good pulper can be built of concrete and with secondhand machine parts. A combination pulper and refiner will be on the market soon. Most jordans are not used to their full capacity. Their work may be doubled in some cases with a pump taking away the stock instead of allowing the jordan to act as a highly inefficient pump and wasting power which otherwise could be used on the fiber. Results from such a hookup are surprising.

Fundamentally speaking, not only now but in a post-war period, the use of deinked and clean waste paper will be on the increase. This fiber has already been treated, it can be freed up and its addition to the furnish can be beneficial.

WET END

On the paper machine, many features tending to make the machine obsolete can be overcome. A modern inlet is a prerequisite for good formation at higher speed. The drive of the machine can be simplified from older antiquated layouts with line shafting, right angle gear reducing units, clutches, etc., with direct electric drives. Suction rolls become necessary as the paper machine speed increases. There are suction couch, suction press, suction extractor and felt suction rolls to be considered. The dual type suction press is an improvement in construction and effectiveness and is particularly adapted for rebuilding jobs. A new type triple action press with a suction roll will soon be available. Improved water removal can be gained with the replacement of every cast iron body press roll. Such rolls deflect much more than rolls made of forged steel. This necessitates higher crowns so detrimental to rubber covering. Forged steel press rolls do cost more but presses can be operated with much greater pressure removing more water from the sheet. This increases drying capacity and allows greater production. With the reduced crowns a more uniform sheet can be made. The increased pressure on press rolls brings up the point of bearings. It is not always easy to replace the old type bronze or babbit bearing liners, which are definitely limited as to pressure allowances, with modern antifriction bearings requiring special housings, but it is easy on a paper machine to replace every bearing requiring oil and grease and operating under heavy pressure with Micarta or similar plastic material liners which have proven themselves definitely superior in applications suitable for water lubrication. These plastic liners do away with oil and grease so detrimental on a paper machine and the same time these liners reduce friction, save power, and stay cool.

To operate a paper machine faster it must run without vibration. The foundations may have to be strengthened. In most cases, the frame work of the machines will shake. Welded steel reinforcements can be applied to stiffen any part of the machine frame. Sometimes, the frame work can be eliminated and the machine can be set down as a modern machine should be. Pneumatic controls to take the place of levers and weights on presses, stock control, water control, variable speed, in fact automatic control of everything becomes more essential for higher production.

DRY END

The drier section is on most paper machines the greatest bottleneck and source of trouble. Volumes have been written on driers, drying rates, steam consumption, condensate removal, etc. Drying rates vary more than any other function in the mill. There is a solution for efficient drying of paper but it has not as yet been widely recognized and adapted. That solution lies in the use of the Yankee drier principle. Basically, a square foot of Yankee drier surface will dry as high as ten times as much as 1 square foot of ordinary drier surface because the paper is made to adhere to the bare drier surface eliminating the air space between sheet and drier. The general introduction and use of the Yankee drier has been limited due to lack of interest and conservatism on the part of the paper maker. No mills could be found to risk the installation of a Yankee drier for more general purposes than heretofore accepted. Yet in the modern manufacture of toilet paper, for instance, a Yankee drier has become essential. That use came from experience gained in the making of cellulose wadding and facial tissue which has to be dried altogether on one drier. Wadding machines operate now at 2,000 f.p.m. Before that, Yankee driers were only used on M.G. papers. It is claimed here that a broad variety of papers in a large range of weights can actually be made on a machine equipped with one or more Yankee driers. The gloss of the M.G. papers will not occur if the paper is taken off the drier surface before it is completely dry. The surface of the paper is improved and densified which should be of interest on printing papers. The strength of the sheet is increased if not completely dried in contact with the drier. At the recent superintendents' meeting in New York, a representative of a Wisconsin mill produced samples of grey M.G. wrapping paper in which 30% of old newspapers were added to the furnish with the astounding result that the sheet showed no loss of strength whatsoever—a result of the compacting of the sheet under heat and pressure on the Yankee principle.

The cost in experimenting with paper machines has held the industry back a lot. The most plausible theories may be too costly to test in practice. As far as Yankee machines are concerned, however, little chance would be taken today. In Europe there are ten times the Yankee machines used as are in this country in proportion to paper production. There is a paper machine running here now as described in the beginning operating with just two 10-foot diameter Yankee driers. The older paper machines present the best opportunity for a real comeback in production with the total elimination of their antiquated dryer sections and their replacement with one or more Yankee driers for a wide field of papers including printing, wrapping, bag, tissue, and many others. There is a hookup for any of these papers as well as an application for part drying of heavy papers and board. It might well be that the streamlining of older machines with the simple Yankee principle will lead the industry to improved and faster methods of making paper.

Freight Group To Meet

The annual meeting of the Central Motor Freight Association will be held at the Hotel Stevens on May 24 according to C. G. Moore, chairman of the board. The afternoon sessions will be devoted to business matters and election of new officers. Paul G. Hoffman, president of the Studebaker Corporation and of the Committee on Economic Development, is to be the annual banquet speaker.

J. F. Strub Rejoins P. & W.

J. Francis Strub, who recently resigned from his post as Regional Chief of the Paper and Paper Products Section of the OPA, today announced that he will return to the scene of his induction into the pulp and paper industry.

On June 1 he will take up his new duties as manager of the domestic paper department of Parsons & Whittemore, Inc., New York, and will be engaged in certain other administrative activities in keeping with the company's post-war plans.

Mr. Strub was first employed by Parsons & Whittemore, Inc., in 1915. Later, in 1930, he resigned to

J. Francis Strub

go with the Jay Hadden Corporation and in 1938 was elected president of that firm. He resigned in December, 1941, to accept a post with the Office of Price Administration, placing his experience and knowledge of the industry in the service of the Government.

During his public career, he served in several executive positions in Washington with the paper and paper products branch and represented the OPA on a number of committees concerned with the conservation of critical materials.

He will be succeeded by Mr. H. E. Voegeli, who was recently tranferred from the OPA Export-Import Price Branch, Washington, D. C.

Louis Bloch Gets Service Pin

A pioneer in the Pacific Coast pulp and paper industry reached a momentous milestone in his career when Louis Bloch, chairman of the board of Crown Zellerbach Corporation, was awarded a pin commemorating fifty years of service with that corporation and predecessor companies.

The presentation of the pin was made at a dinner at the Palace hotel in San Francisco on April 5 before members of Mr. Bloch's family, business associates, personal friends and about 300 employees. The actual presentation of the pin was made by Mrs. Ludwig Schwabacher, widow of the late vice-president and general manager of the pioneer Crown Paper Company, who was Mr. Bloch's first employer and mentor.

J. D. Zellerbach, president of the Crown Zellerbach Corporation, who acted as master of ceremonies, traced the relationships between the Zellerbach and Bloch families which began more than forty years ago. Mr. Zellerbach then presented to Mr. Bloch a beautifully embossed, leather-bound testimonial signed by thirty of his official associates of Crown Zellerbach organization.

Another presentation was a beautifully embossed plaque from the Crown Zellerbach employees to Mr. Block for his "Fifty Years of Accomplishment."

Others who made appropriate remarks were William D. Welsh of the San Francisco headquarters, who represented the Crown-Zellerbach employees; John Francis Neylan, nationally known attorney, who for many years represented one of the company's largest customers of newsprint; and Attorney Franklin T. Griffith of Portland, Ore., himself a wearer of a Crown Zellerbach fifty-year pin.

Howard Paper Co. Commended

The Howard Paper Company Urbana, Ohio has received the following letter from the War Department which is self explanatory:

"The performance of your mill in the manufacture of Army Map paper has enabled us to deliver important maps to our Armed Forces in time and in quantity.

"Perhaps the overall volume of paper for this Service is not phenomenal, but the final product, built around rigid specifications and the speed with which deliveries have been made, is certainly an accomplishment. We appreciate the way you have handled our needs.

The future is unpredictable, but be sure you will be called on again and again to furnish paper in a hurry and in volume. It is essential to us that you can continue to give us more of the same fine service we have had.

"Please compliment your entire organization on the splendid job they have done and let them know that the paper they make goes into maps that will direct our Army to victory."

The Howard Paper Company as a tribute to its loyal employees ran a full page advertisement in a recent issue of the Urbana Daily Citizen, displaying this letter and the names of its men in the armed forces.

Rules on Thirty Pound Newsprint

Washington, D. C., May 3, 1944—Effective May 1, 1944, and until July 31, 1944, lightweight newsprint manufactured outside the United States may be bought by United States consumers at ceiling prices not in excess of $4.00 per ton above maximum prices for standard weight newsprint, the Office of Price Administration announced today.

Establishment of the specific differential, which is at the request of foreign producers of newsprint, gives foreign lightweight newsprint the same differential granted to lightweight newsprint produced in the United States.

OPA pointed out that, because the 30 pound paper is thinner, a greater yardage of paper is contained in each ton of newsprint sold, compared with the heavier 32 pound paper. Thus, even with a $4 per ton differential for lightweight newsprint, little or no increase in paper cost will be incurred by publishers, the principal buyers of newsprint.

A. H. Stanton Joins Magnus Chemical Co.

The Magnus Chemical Company, Inc., Garwood, N. J., manufacturer of industrial cleaning materials, announces the appointment of Avery H. Stanton as technical engineering consultant.

Mr. Stanton, a graduate of the Massachusetts Institute of Technology, was formerly with the War Production Board at Washington, D. C.

He is well known to the pulp and paper industry, having been actively associated with this industry

AVERY H. STANTON

for a number of years prior to serving in Washington.

The major portion of Mr. Stanton's activities in his new position will be devoted to Government agencies and the pulp and paper industry in regard to industrial cleaning and process control compounds.

Hunt Appointed Asst. Director

George M. Hunt, who for many years has been chief of the Division of Wood Preservation at the U. S. Forest Products Laboratory, has been appointed an assistant director of the Laboratory, Director Carlile P. Winslow announces.

Mr. Hunt has been on the Laboratory staff for more than 30 years as a chemist, during which time he has specialized in the field of wood preservation. Since 1920 he has directed the research of the Laboratory's division of wood preservation, which covers glues, plywood manufacture, wood finishing, and fireproofing in addition to wood preservatives and preservative treatments.

In his new capacity, Mr. Hunt will serve as Director Winslow's representative in planning, integrating, and coordinating the Laboratory's research program and in developing postwar needs and plans, Mr. Winslow said. T. R. Truax, who has been Mr. Hunt's associate while the latter was chief of the division of wood preservation, is now directing that division.

Since the entry of the United States into the present war, extensive research progress for the Army, Navy, War Production Board and other war agencies have been conducted under Mr. Hunt's direction. Plywood and glues for Army and Navy wood aircraft are used according to specifications based on research under these programs and wood aircraft construction, inspection, and repair methods have been materially influenced thereby.

Research under his supervision has also covered the testing of wood and glue preservatives, fire-retardant paints, and laminated timbers for heavy construction and ships. The scope of this research ranges from studies of treatments that protect wood from marine borers infesting salt water to the testing of modern synthetic-resin glues to ascertain their adaptability in aircraft, ships, and prefabricated housing.

During the summer of 1926, Mr. Hunt visited a dozen European countries to study advances made in wood utilization, inspecting developments in Great Britain, Germany, France, the Low Countries, Sweden, and Central Europe. He is joint author with Dr. George A. Garratt of the School of Forestry at Yale University, of a standard textbook on "Wood Preservation." In 1933, at the request of the Alaska Railroad, he made an investigation of the feasibility of constructing a wood preserving plant in Alaska to treat ties and timbers for that railroad. He has also served on the Committee on Marine Piling Investigations of the National Research Council and the Marine Piling Committee of the American Wood Preservers' Association.

A native of Salem, Oregon, Mr. Hunt is a graduate of the University of California at Berkeley. Shortly after his graduation he joined the Forest Service at San Francisco, Cal., in 1911 as a chemist. He was transferred to Seattle in 1912 and to the Laboratory in 1913, and has remained there ever since.

A Correction

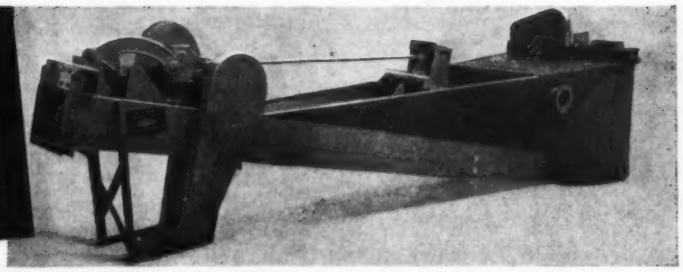
Johannes Westergaard, vice president of Castle & Overton, Inc., New York, writes "In reading the report, published on page 12 of the issue of the PAPER TRADE JOURNAL of April 27, of the New England TAPPI meeting, I find that your reporter has misunderstood me when he says that Finland and Sweden probably will serve the local European market before considering overseas shipments. This is exactly the opposite of what I said regarding shipments of pulp. I stated that 'the rumors that all Swedish pulp would go to Europe after the war are without foundation. As a matter of fact, I believe that Sweden will wish to reestablish her position in the American market at the earliest possible moment and ship here in the same proportion that she did prior to the war at least'."

Burtis Dietrich Made Sales Manager

Edward A. McGough, vice president and eastern general sales manager of Sabin Robbins Paper Company, announces that Burtis Dietrich has been appointed sales manager for the Philadelphia Division.

For the last seventeen years Mr. Dietrich has been associated with Sabin Robbins in the New England area, and has been engaged in the paper business during his entire career. Sabin Robbins have been national distributors of fine printing papers since 1884, and now have nineteen offices throughout the country. Their Philadelphia office, 31st and Walnut streets, has been in operation for the last fourteen years.

EFFICIENT LIME SLAKING for KRAFT MILL RECAUSTICIZING



• EFFICIENT LIME SLAKING IS THE KEY TO THE WHOLE CAUSTICIZING OPERATION

Accurate control of dilution, temperature and degree of agitation fixes the particle size of the lime mud, which in turn determines the following essential factors:

1. Settling rate of the lime mud
2. Clarity of the white liquor produced
3. Washing efficiency of the system
4. Capacity of the whole causticizing plant

The Dorrco Slaker is a complete unit—it slakes the lime and removes mechanically and continuously over and under-burned lime and silica, which would otherwise build up in the circuit. What other slaker embodies all of the above features in one unit?

Write for a Dorr Engineer to explain the advantages of the recently remodeled Dorrco Slaker.

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New York Paper and Pulp Market Review

Demand and Production of Paper and Paper Products Continues Heavy With Production High — Mill Receipts of Pulpwood Increased In March—More Stock Is Needed—Rag Markets Strong.

Office of the PAPER TRADE JOURNAL.
Wednesday, May 3, 1944.

Demand for all types of paper and paper products continues heavy, with concern relating to the gradual tightening supply situation reflected in many reports received this week from manufacturers' representatives, jobbers, and general paper merchants.

The trade supply of wrapping and bag papers appears less favorable, as second quarter production for this year is approximately 23% less than for the same period last year, with war requirements substantially higher.

A reopening of an inquiry into the shortage of paper and pulp by the Senate War Investigating Committee, has been announced by Senator Truman, chairman. A public hearing will be held on May 23.

Paper production for the week ended April 22 was estimated at 91.3%, compared with 89.7% for 1943, with 100.1% for 1942, with 97.8% for 1941, and with 89.4% for the corresponding week for 1940.

Paper board production for the week ended April 22 was 98.0%, compared with 97.0% for 1943, with 93.0% for 1942, with 84.0% for 1941, and with 75.0% for the corresponding week for 1940.

Wood Pulp

Mill receipts of domestic pulpwood for March totaled 1,337,000 cords, compared with 1,312,000 cords for February and with 1,043,000 cords for March, 1943, the committee of the Pulpwood Consuming Industries reports. Imports from Canada for March totaled 145,000 cords, providing over-all receipts of 1,482,000 cords.

More wood pulp has been allocated in the second quarter for the production of sanitary tissues, the WPB has announced. The allocation totals 209,676 tons, compared with 196,311 tons in the first quarter.

Rags

Demand for new cotton cuttings continues heavy and reported above supplies at this date. All grades are active. Prices are strong and are firmly maintained at ceiling levels.

The old cotton rag market is active. Mill buying of the roofing grades is heavy. Prices are strong at ceiling levels.

Old Rope and Bagging

No important change in the old rope market has been reported this week. Demand for Manila rope is heavy and in excess of supply. Other hard fibers are in active demand. Prices are strong at ceiling levels.

The scrap bagging market continues slow, with trading at a low level, under a limited demand. Prices are reported soft and nominal.

Old Waste Paper

Mill demand for paper stock continues urgent. Collections for the month of March are estimated to total 619,000 tons, an increase of about 57,000 tons above February, 1944.

Donald M. Nelson, chairman of the War Production Board, is reported as promising an investigation of complaints that two of his subordinates are responsible for the critical supply situation in paper and wood pulp.

Twine

No important change during the week has been reported in the twine market. Demand for all available grades is active. Prices are firm and unchanged.

Heads Sales Development Dept.

The Hooker Electrochemical Company announces the appointment of A. Vaughn Chinnock to its Sales Development Department with headquarters in Niagara Falls, N. Y. Mr. Chinnock, a member of the American Chemical Society, graduated from Cornell University in 1932 and taught science for eight years. For the past four years he has been in the Research and Development Department of the Hooker Company at its Niagara Falls plant, where he has been actively engaged in pilot plant work in connection with developing new products to the commercial scale. His background in many of Hooker's newer chemicals prepares him to render valuable assistance to industries requiring these products for war use.

Finland Produces More Pulp

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 3, 1944—Finland's pulp and paper industry showed increased production in the third quarter of 1943, according to a report received at the Department of Commerce. Output of cellulose amounted to 130,000 metric tons against 123,000 metric tons recorded in the same period of 1942. Production of mechanically ground pulp, for other than use by the manufacturers themselves in making paper, though still comparatively small did increase to 17,000 metric tons from 10,000 metric tons in the third quarter of 1942. Manufacture of paper was active, amounting to 93,000 metric tons in the period July 1 to October 1, 1943 compared with 63,000 metric tons in corresponding months of 1942.

F. E. Ruhling Made Director

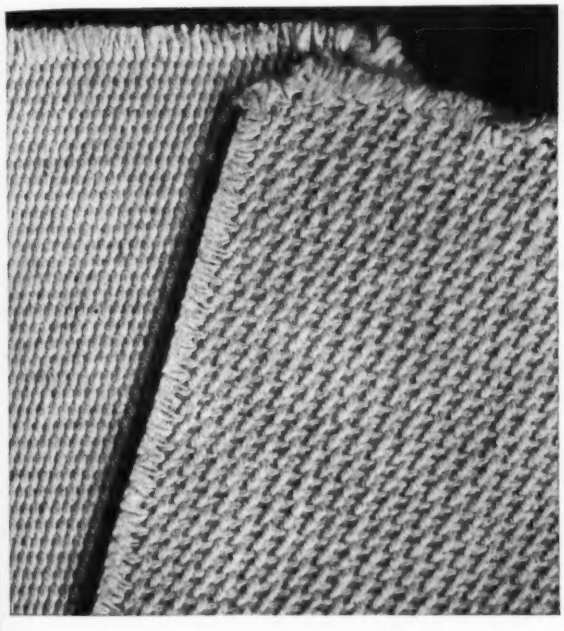
The Lily-Tulip Cup Corporation announces that Frederick E. Ruhling, vice president in charge of the Metropolitan Sales Division, has been elected a member of the board of directors.

Mr. Ruhling has been manager of sales in the Metropolitan New York territory since 1929. Previous to that he was president of the Ideal Cup Corporation, manufacturers of paper drinking cups.

From 1913 to 1924, Mr. Ruhling was general sales and advertising manager of the Cracker Jack Company of Chicago, a member of its board of directors and general manager of the New York factory.

Mr. Ruhling's managerial experience dates back to 1899 when he was made general manager of the Anger Baking Company

BRANDON
DRYER
FELTS



Manufactured from the raw cotton to the finished felt

BRANDON EXTRA

TRI-UMPH all cotton, 3 ply 53 oz., widths up to 250".

ZEPHYR all cotton, 3 ply 45 oz., widths up to 196".

ZEPHYR cotton-asbestos 3 ply Face 50% asbestos, back open construction for high porosity. Widths up to 166".

HINDLE S/54 all cotton special weave. Extra heavy duty Preshrunk, high porosity, widths up to 170".

SCAPA-HALL S/46 and S/46A. Available after VICTORY.

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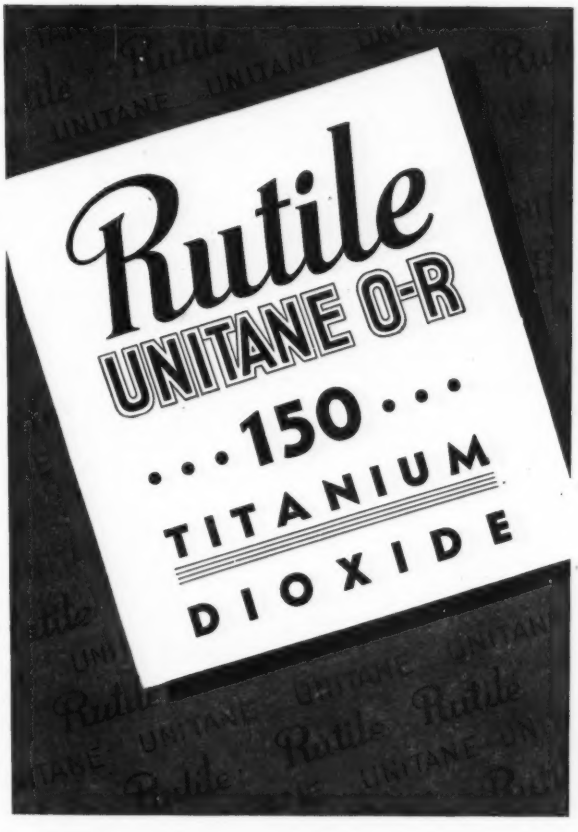
Christian Co., Richmond, Va.
D. H. White, Standard Supply Co., New Orleans
Frank P. Wilder, Portland, Ore.
James A. Taylor & Son, Portland, Maine



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HIGHER STRENGTH • ECONOMY

Suitable for ALL types of paper ranging from thin printing papers and waxing tissues to coated book and magazine stocks.

UNITANE O-R150 was especially developed for paper pigmentation. Its excellent dispersion in water promotes good retention and excellent sheet formation. As a component of the beater furnish, it produces whiter sheets of great brilliance, and superior printing qualities.

SAMPLES of UNITANE O-R150 will be sent promptly upon request.

UNITED COLOR and PIGMENT DEPARTMENT
CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
NEWARK, NEW JERSEY
Calco UNITED

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL.
Wednesday, May 3, 1944.

BLANC FIXE—Quotations on blanc fixe continue firm and unchanged. Demand is reported fair. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is quoted at $60 per ton, f.o.b. works.

BLEACHING POWDER—Current demand is active but supply is adequate. Quotations are unchanged. Prices on bleaching powder range from $2.50 to $3.10 per 100 pounds, in drums, car lots, at works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 24 cents per pound; 2,000 pounds, 24½ cents per pound; less than 2,000 pounds, 24¾ cents per pound, f.o.b. shipping point.

CAUSTIC SODA—Demand continues heavy. Market continues tight. Prices are unchanged. Solid caustic soda is quoted at $2.30 per 100 pounds; flake and ground is quoted at $2.70 per 100 pounds; all in drums, car lots, at works.

CHINA CLAY—Quotations on china clay are unchanged. Current demand is reported fair. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mine. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Demand and production reported as satisfactory. Quotations are unchanged. Chlorine is currently quoted at $1.75 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN—Prices on some grades are lower for the current week. "G" gum rosin is quoted at $4.61 per 100 pounds, in barrels, Savannah. "FF" wood rosin is quoted at $4.60 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is currently quoted at $4.88 per 100 pounds, f.o.b. works.

SALT CAKE—Prices on salt cake are reported unchanged for the current week. Demand is reported moderate. Domestic salt cake is quoted at $15 per ton, in bulk. Chrome salt cake is quoted at $16 per ton. All prices in car lots, f.o.b. shipping point.

SODA ASH—Heavy demand continues for domestic requirements and market is still tight. Quotations continue unchanged. Current prices, car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Limited shipments of corn continues to maintain a tight market situation in corn and its products. Quotations are unchanged. The pearl grade is quoted at $3.72 per 100 pounds; powdered starch at $3.83 per 100 pounds; all prices in bags, car lots, f.o.b. Chicago.

SULPHATE OF ALUMINA—Demand reported active. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.25 per 100 pounds, in bags, car lots, f.o.b. works. The iron free is quoted at $2.35 per 100 pounds, in bags, at works.

SULPHUR—Quotations on sulphur continue to conform to prevailing market prices. Annual contracts are quotated at $16 per long ton, f.o.b. mines; the price at Gulf Ports is $17.50 per long ton.

TALC—Prices on talc continue unchanged. Demand moderate. Domestic grades are currently quoted at from $16 to $21 per ton, at mines; Canadian at $24 per ton. All prices in car lots.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

News, per ton—

Roll, contract	*$58.00	@	—
Sheets	64.00	"	—

* OPA Maximum Price.

Kraft—per cwt.—Carload Quantities Zone A, f.o.b. Mill

Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag	*4.375	"	—

* OPA Manufacturers' Prices.

Tissues—Per Ream—Carlots

White No. 1	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½	1.00	"	—
White No. 2	.90	"	—
Anti-Tarnish M.F.	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—

Toilet—1 M. Sheets—Per Case

Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—

Paper Towels, Per Case—

Unbleached, Jr.	2.20	"	—
Bleached, Jr.	3.20	"	—

Manila—per cwt.—C. l. f. a.

No. 1 Jute	11.25	@	—
No. 1 Manila Wrapping, 35 lb.	6.00	"	6.25
No. 2 Manila Wrapping, 35 lb.	5.75	"	6.00

Boards, per ton—

News	*48.00	@	—
Chip	*48.00	"	—
Sgl. Mla. Lk. Chip	*60.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*63.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$39.10@$46.00	$40.25@$47.25
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	29.90 " 35.00
75% Rag	23.00 " 27.00	24.15 " 28.25
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$10.55@$12.75	$11.70@$14.25
No. 2	9.65 " 11.75	10.80 " 13.25
No. 3	9.20 " 11.25	10.35 " 12.50
No. 4	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated	$13.65	@	$15.50
No. 2 Glossy Coated	12.40	"	14.00
No. 3 Glossy Coated	11.60	"	13.25
No. 4 Glossy Coated	11.15	"	12.75
No. 1 Antique (watermarked)	10.25	"	11.75
No. 2 Offset	9.60	"	11.00
A Grade E. F.	9.35	"	10.75
A Grade S. & S. C.	9.60	"	11.00
B Grade E. F.	8.85	"	10.25
B Grade S. & S. C.	9.10	"	10.50
C Grade E. F.	8.55	"	9.75
C Grade S. & S. C.	8.80	"	10.00
D Grade E. F.	8.25	"	9.50
D Grade S. & S. C.	8.50	"	9.75

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight Not Exceeding OPA Allowances.

Bl. Softwood Sulphite	$86.00
Unbl. Softwood Sulphite	74.00
Bl. Hardwood Sulphite	83.50
Unbl. Hardwood Sulphite	71.50
Bl. Mitscherlich	81.00
Unbl. Mitscherlich	72.00 @ 82.00
N. Bleached Sulphate	86.00
S. Bleached Sulphate	79.00
N. Semi-Bleached Sulphate	82.00
S. Semi-Bleached Sulphate	75.00
N. Unbl. Sulphate	73.00
S. Unbl. Sulphate	63.50
Bl. Soda	72.00
Unbl. Soda	68.00
Groundwood	50.00

Transportation Allowances Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area)	10.50
West Coast (out area)	16.50

	50%-80% Air Dry Weight
Northeast	$11.50
Lake Central	11.50
Southern	14.00
West Coast (in area)	9.50
West Coast (out area)	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.25*
Silesias No. 1	—	"	5.75*
New Unbleached	6.75	"	7.50*
Blue Overall	—	"	5.50*
Fancy	—	"	3.50*
Washables	—	"	3.00*
Bleached Khaki Cuttings	—	"	4.25*
Unbleached Khaki Cuttings	—	"	3.00*

* OPA Maximum Prices.

The successful hitching of the steam engine to a paddle wheel enabled Robert Fulton to drive the Clermont through the waters of the Hudson River. Yankee ingenuity triumphed again. Call it research if you like. Lindsay desires by sincere effort to contribute materially to the improvement of Fourdrinier wire cloth and of the paper that is made from it.

THE LINDSAY WIRE WEAVING COMPANY
Serving the Paper Industry Since 1903
14001-14299 ASPINWALL AVE., CLEVELAND 10, OHIO

Lindsay **WIRES**
FOR PAPER MILLS

PRICE & PIERCE »»»»»»»ltd•

Wood Pulp & Paper Agents

60 East 42 Street
New York, N. Y.

SOLVAY*

...KEYED TO TODAY AND TOMORROW

Today ... Solvay Alkalies including Soda Ash, Caustic Soda and many other important related products are indispensable to manufacturers of electronic and communication instruments. These chemicals, employed in many vital operations, are supplied by 3 strategically located plants. Established in 1881, Solvay is America's largest source of alkalies.

Tomorrow ... Solvay's progressive research will pace progress in the electronic field with newly developed chemicals. With extensive resources, facilities, and experience, Solvay will continue to manufacture the best of alkalies and help industries make new products. It will serve industry with comprehensive information and technical service.

SOLVAY
The Solvay Process Company employs salt, limestone and ammonia to make Soda Ash, from which basic material Caustic Soda and other alkalies are derived

SODA ASH
AMMONIUM BICARBONATE
AMMONIUM CHLORIDE
PARA-DICHLOROBENZENE
CAUSTIC POTASH • CHLORINE • MODIFIED SODAS

CAUSTIC SODA
POTASSIUM CARBONATE
SODIUM NITRITE • SALT
CALCIUM CHLORIDE

SOLVAY SALES CORPORATION
Alkalies and Chemical Products Manufactured by The Solvay Process Company
40 RECTOR STREET NEW YORK 6, N. Y.

Old Rags

White, No. 1—			
Repacked	*3.80	"	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Third and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.80	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

*OPA Maximum Prices.

Foreign Rags

All Prices nominal

New Rags

New Dark Cuttings	2.25	●	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	2.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	4.25	●	4.35
Wool Tares, light	4.25	"	4.50
Wool Tares heavy	4.50	"	5.00
Bright Bagging	4.50	"	4.85
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	2.00	"	—

*OPA Maximum Price.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	●	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
Mixed Books	.85	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Mixed Ledger, colored	1.87½	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.85	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.15	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	.85	"	—

Twines

All Prices Nominal

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	●	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	17¼	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—

(Hard Fiber)

Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill.)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¾
Light Silesias	.05¾
Black Silesias, soft	.03¾
New Unbleached	.07½
Washable Prints	.04¼
Washable No. 1	.03
Blue Overall	.05½
Cottons—According to grades—	
Washable shredding	.01¾
Fancy Percales	.04¾
New Black Soft	.03¼
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04¼
Men's Corduroy	.03¼
Ladies' Corduroy	.03
Cottonades	.03¼

Domestic Rags (Old)

White No. 1—Repacked	3.80	"	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
White No. 2 Repacked	2.90	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	"	3.50
No. 1 Clean bright—			
Sisal Strings	.04		
No. 2 Clean bright—			
Sisal Strings	.03		
Sisal Jute	.02½	"	.02¾
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Overissue News	.85	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.15	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	3.25	●	—
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	*4.25	"	—
Mixed Rope	2.00	"	—
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	5.25	"	—
Jute Cr Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.50	"	—
Wool Tares—			
Foreign	(nominal)		

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices

No. 1 Hard White Shavings, unruled	2.87½	●	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Overissue News	.85	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.15	"	—
Jute Corrugated Cuttings	1.07½	"	—
Misc.	2.15	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Ledger, colored	1.87½	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Box Board Cuttings	.72½	"	—
Kraft Corrugated Cuttings	2.25	"	—
Old Corrugated Containers	1.15	"	—
Overissue News	.85	"	—
No. 1 News	1.00	"	—

Bagging

(F. o. b. Boston)

Domestic	4.25	"	
Aust. Wool Pouches	3.75	"	4.00
New Burlap Cuttings	4.75	"	5.00
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Roofing Bagging	1.35	"	—

*OPA Maximum Price.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	●	.04¾
Fancy Percales	.04¼	"	.05
New White No. 1	.06¾	"	.07
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06½
Underwear Cutters, Bleached	.06¼	"	.06¾
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06½
New Black Silesias	.03	"	.03½
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06½	"	.06¾
Blue Cheviots	.05½	"	.06
Fancy	.02¾	"	—
Washable	.02¾	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03¼	"	.03½
New Canvas	.06½	"	.06¾
B. V. D. Cuttings	.06¼	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	●	—
Miscellaneous	3.20	"	—
White No. 2—			
Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—
No. 2	1.45	"	—
No. 3	1.35	"	—
No. 4	1.35	"	—
No. 5, Quality A	1.35	"	—
Quality B	1.20	"	—
Quality C	.95	"	—
Old Manila Rope	5.75	"	—

*OPA Maximum Prices

Foreign Rags

(F. o. b Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	1.37½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.17½	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—
No. 1 Roofing Rags	1.35	"	—
No. 1 Roofing Bags	1.45	"	—